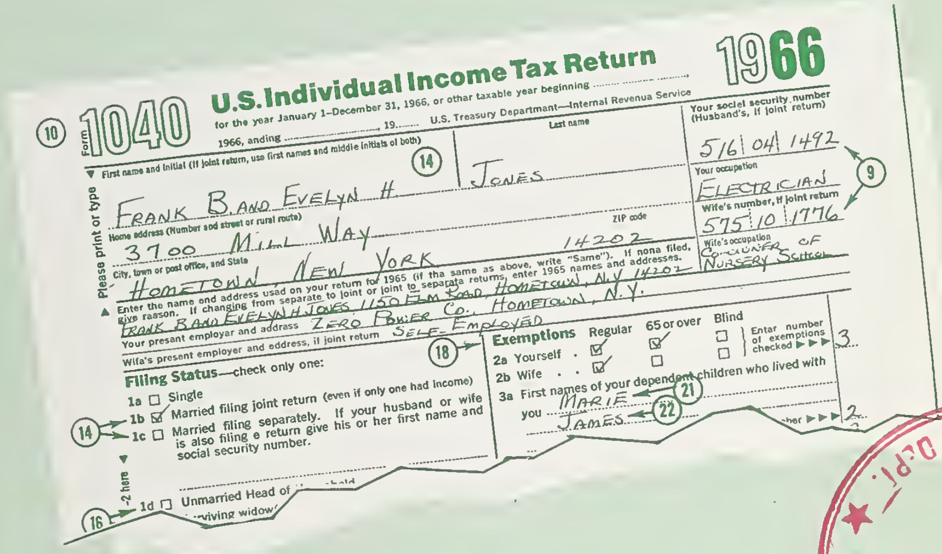
D1.38/2:3
/2

RTMENT OF DEFENSE
COST REDUCTION JOURNAL



⑩ Form 1040 U.S. Individual Income Tax Return 1966

for the year January 1–December 31, 1966, or other taxable year beginning ...., 19...... 1966, ending ....

U.S. Treasury Department—Internal Revenue Service

Please print or type

First name and initial (If joint return, use first names and middle initials of both) ⑭ FRANK B. AND EVELYN H.

Last name JONES

Your social security number (Husband's, if joint return) 516 04 1492

Your occupation ELECTRICIAN

Wife's number, if joint return 575 10 1776 ⑨

Wife's occupation COUNSELOR OF NURSERY SCHOOL

Home address (Number and street or rural route) 3700 MILL WAY

City, town or post office, and State HOMETOWN, NEW YORK ZIP code 14202

Enter the name and address used on your return for 1965 (if the same as above, write "Same"). If none filed, give reason. If changing from separate to joint or joint to separate returns, enter 1965 names and addresses. FRANK B. AND EVELYN H. JONES 1150 ELM ROAD, HOMETOWN, N.Y. 14202

Your present employer and address ZERO POWER CO., HOMETOWN, N.Y.

Wife's present employer and address, if joint return SELF-EMPLOYED

Filing Status—check only one:

1a ☐ Single

⑭ 1b ☑ Married filing joint return (even if only one had income)

1c ☐ Married filing separately. If your husband or wife is also filing a return give his or her first name and social security number.

⑯ 1d ☐ Unmarried Head of ...hold ...viving widow

⑱ Exemptions

	Regular	65 or over	Blind	
2a Yourself	☑	☑	☐	Enter number of exemptions checked ▶▶▶ 3
2b Wife	☑	☐	☐	

3a First names of your dependent children who lived with you MARIE ㉑ JAMES ㉒ ...ber ▶▶▶ 2

The Net Is Greater This Year (page 12)

DOCUMENTS D.P.I.
JUN 19 1967
UNIVERSITY OF FLORIDA LIBRARIES

Page
HOW DECISION MAKERS WEIGH THE ODDS 3
KEEPING ADP OPERATIONS SLIM AND TRIM 9
A WORK-TOGETHER PLAN FOR FINANCIAL SYSTEMS . 17
WHY SOME PROGRAMS FAIL 25

OF FLORIDA LIBS.
DOCUMENTS
DEPARTMENT
U.S. DEPOSITORY

SPRING • 1967

Volume III, Issue No. 2

FLARE

ARTICLES

Page

Planning, Programming, Budgeting Systems . 3
Charles W. Schultze

Toward Tighter, Leaner ADP Operations ... 9
Paul H. Riley

IRS-Increased Revenue Savings............ 12
Sheldon S. Cohen

Better Systems for Better Management..... 17
George W. Bergquist

Motivation of Manpower.................... 25
Albert F. Hammer

"Softwear" Study Panels..................... 39
Donald L. Sanxter

FEATURES

Food for the Fighting Man.................. 6
The Ammi Pontoon......................... 20
Supply Line to Vietnam 36
ZD Awards For Contractors................. 42
"No Goal-No Action" No Excuse........... 44
Priority Distribution System................ 50

REPRINTS

The Contractor Cost Reduction Program.... 30
A SecDef Memo

Cost Crackdown............................. 34
A Wall Street Journal Summary

Cost Reduction Journal

Published by the Directorate for Cost Reduction Policy, Office of the Assistant Secretary of Defense (Installations and Logistics).

Honorable PAUL R. IGNATIUS
Assistant Secretary of Defense
(Installations & Logistics)

Mr. PAUL H. RILEY
Deputy Assistant Secretary of Defense
(Supply and Services)

Mr. HARRELL B. ALTIZER
Director for Cost Reduction Policy

Editor........... **EDWARD E. OPPENHEIM**
Associate Editor..... **JAMES E. McCANNELL**

Contributing Editors

Army (Raymond C. Chase, Jr.)...OX 7–8487 (ac 202)
Room 1D569, Pentagon, Washington, D.C.

Navy (Oliver G. Green)..........OX 6–4393 (ac 202)
Room H–116, Main Navy Building, Washington, D.C.

Air Force (S. M. Funk)..........OX 7–6034 (ac 202)
Room 4E269, Pentagon, Washington, D.C.

DSA (L. M. Sundquist)..........OX 8–1176 (ac 202)
Room 3C390, Cameron Station, Washington, D.C.

The Cost Reduction Journal is published quarterly by the Directorate for Cost Reduction Policy, Office of the Assistant Secretary of Defense (Installations and Logistics), for distribution within the Department of Defense.

The Cost Reduction Journal seeks to stimulate cost reduction ideas, promote cost consciousness, and enhance understanding of efficiency programs. The Journal's content includes: (1) cost reduction goals and accomplishments; (2) policies and procedures of the cost reduction system; (3) cost reduction techniques and processes in all functional areas from which savings are derived; (4) new developments in concepts and philosophy that affect cost reduction objectives; and (5) specific cost reduction examples, with attribution where appropriate.

Unless otherwise indicated, Journal material may be reprinted provided: (1) credit is given to the Journal and the author; and (2) a single copy of the reprint is forwarded to the Journal.

Inquiries dealing with the Journal's policy and content may be directed to: Editor, Department of Defense Cost Reduction Journal, Room 2B322, Pentagon, Washington, D.C. 20301.

The Journal is available on subscription from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, $1.25 a year domestic, 25 cents additional for foreign mailing. Single copy 35 cents.

MOSQUITO FEEDING NOW HUMDRUM

A new way to feed mosquitoes is keeping things buzzing at Fort Detrick, Maryland.

The Entomology Department consumes hordes of the pesky varmints in experimenting with insecticides, antibiotics, chemosteritants and the like. Past practice had been to feed the mosquitoes by placing cotton pads saturated with a sucrose solution on the wire-screen cover of the mosquito container. Fresh pads and solution were prepared daily. Technicians found this method messy and full of bugs.

Starting from scratch, idea men in the lab whisked up a new device to take the sting out of feeding chores. Once the device is placed inside the container, the insects can feed for as long as the experiment requires—60 days for adult longevity determination—without preparing a new solution. The new method also provides a very slow evaporation rate for the sugar solution which helps control humidity which, in turn, is very important in raising and maintaining colonies of contented mosquitoes. In addition, the fact that the feeder can be used with solutions of radio-active materials, amino acids, dyes, and other soluble compounds has helped open up new areas of research activity.

While savings in labor have not bitten deeply into Army's budget, the $5,600 cost reduction is a real humdinger.

FRAGRANT SWAMPS NO BARGAIN

John J. Boyle, of Defense General Supply Center, Richmond, Va., points to formula for producing malathion. He was responsible for a cost reduction of $160,000 by eliminating the deodorizing additive from the insecticide to be used for outdoor spraying.

O, O-dimethyl dithiophosphoric acid + ethyl maleate yields
O, O-dimethyl dithiophosphate of diethyl mercaptosuccinate (malathion, Grade B, non-deodorized)
Malathion, Grade A (deodorized) at a cost of approximately 20¢ per pound above Grade B

The average housewife expects two characteristics from a can of insecticide: it must kill insects and it must have a pleasant odor. Insecticide manufacturers achieve the latter advantage by adding deodorants to hide the undesirable smell of the active chemicals.

Recently, John J. Boyle, a chemical and petroleum specialist at the Defense General Supply Center in Richmond, Virginia, got wind of a potential savings in the requirements for 237,325 gallons of malathion.

He found that the insecticide would be sprayed over jungle and swamp areas by airplanes to control malaria-bearing mosquitoes.

He also found that the formula for the malathion contained a deodorant additive. Seeing no military advantage in perfuming a swamp, he nosed around and discovered a Grade B malathion that had all the ingredients for insect control except the fancy aroma. His find cost $0.20 per pound less than the standard Grade A which included the deodorant. The saving on the first buy of 237,325 gallons was $160,302—an amount not to be sniffed at.

THE DEFENSE EMPLOYEE—HOW EFFICIENT?

An impartial statistic or two from the Civil Service Commission shows that the average civilian employee in Defense is a mighty prolific guy (with economy ideas, that is).

Head for head, the Defense civilian in FY 1966 turned in useable beneficial suggestions at a 40% higher rate than did the non-Defense Federal employee. Would you believe 73,325 adopted suggestions? That is the CSC count for Defense—or 6.9 suggestion awards per 100 employees. The remainder of the Government averaged 4.9 suggestion awards per 100 employees. The Government-wide average (including DoD) was 5.7 per 100 employees.

Dollar for dollar, the Defense civilian also outpaced his civil agency colleague. Defense employees generated 75% of all savings attributed to the Federal Incentives Awards Program in FY 1966—achieved from both beneficial suggestions and superior performance. The 75% ratio is way ahead of statistical expectancy. Anyone making book on outcomes would have had to predict 50% on a Defense share-of-the-budget basis, or 43% if he looked to the Defense share of total Federal civilian employment.

The measurable dollar benefit to the taxpayer from each award to a Defense civilian in FY 1966 was $1,843, a figure almost triple the value of the average dollar return per award in non-Defense agencies.

Cost of the awards was peanuts by comparison, averaging in Defense $49 per beneficial suggestion and $135 per superior performance recognition.

We would be hard put to pick a front runner from among the military departments. On a *per capita* basis, Air Force is tops in the "adopted suggestions" tally with a rate of 7.9 per 100 employees. From a measurable benefit view, Army heads the list with a $114 million total. In sheer numbers of worthwhile suggestions, Navy leads with 24,889.

What's the difference! It all adds up to bouquets for our thinking, innovating, cost-reducing Defense civilians.

So what else is new?

FEDERAL INCENTIVE AWARDS PROGRAM—FY 1966

Department/Agency	Civilian employees, average, FY 1966	Suggestions adopted			Superior performance awards			Value of measurable benefits from suggestions and superior performance
		Aggregate	Per 100 employees	Average cash award	Aggregate	Per 100 employees	Average cash award	
Defense	1,053,487	73,225	6.9	$49	41,892	4.0	$135	$211,817,508
Army	376,334	23,064	6.1	51	20,916	5.6	117	114,368,787
Navy	337,175	24,889	7.4	48	8,724	2.6	158	35,012,764
Air Force	294,254	23,237	7.9	48	11,179	3.8	145	58,961,250
DSA	45,554	2,035	4.5	51	1,073	2.4	139	3,474,707
Non-Defense agencies	1,337,873	67,554	(—)	(—)	38,621	(—)	(—)	69,605,400
Total government	2,431,460	140,779	5.7	42	80,531	3.3	146	281,422,908

Managerial Complements

PPBS *and* COST REDUCTION

By **CHARLES L. SCHULTZE**
Director of the Bureau of the Budget

A System for Decision Makers

Before I discuss the relationship between PPBS and cost reduction I should explain the letters PPBS, a combination which is, perhaps fortunately, unpronounceable. As most readers of this magazine should know, they are the initials of the Planning-Programming-Budgeting Systems program, which originated in the Department of Defense and now—at the direction of President Johnson—has been extended to civilian agencies. I have come to the conclusion that it was a stroke of genius to select for such an important Federal program a name whose initials do not spell out a word so easy to remember that only the initials survive, and not the substance. All of us are constantly reminded that PPBS—Planning-Programming-Budgeting Systems—is just that, a complicated system intended to get good analytic thinking into the Federal decision-making process.

Program Evaluation Complements Cost Reduction

Since we do not have all the money, all the people and all the skills we need to do everything at once, we must do the most with what we have, and this calls for the efficient allocation of Federal resources. To do this requires two kinds of choices: First, a choice of the least cost method of carrying on a given program—this is what is usually called cost reduction. Second, a choice of where to allocate resources among the many claims of new and existing programs—this can best be described as program evaluation, and the process by which this is done, as program budgeting.

In the most fundamental sense these are not two different approaches to the decision-making process. They are complementary activities, both of which are concerned with obtaining the maximum impact from the use of limited resources. Whether a particular activity is called cost reduction or program evaluation may depend on the point of view of the observer. The major difference between the two types of activity is that program evaluation is a part of a system of analysis and budgeting that is designed to increase the effectiveness of the decision-making process throughout the Federal Government. It emphasizes the use of modern techniques of management control and systems analysis to define program objectives, measure program performance, allow for inevitable uncertainties, and weigh the alternative methods of producing a given objective.

Underlying Planning-Programming-Budgeting Systems (PPBS) is the rigorous analysis of the actual outputs of programs and of the full range of the benefits

---

The author acknowledges the assistance of John Haldi, Chief of Program Evaluation in the Bureau of the Budget, and his staff in preparing this paper.

and costs of possible alternatives. Thus, while cost reduction efforts usually, though not always, take the program objectives as given and concentrate on doing those things which are to be done with maximum efficiency, the PPB system is oriented much more towards ensuring that the right things are being done. In other words, PPBS and cost reduction complement each other, go hand in hand.

System is Output-Oriented

The benefits of PPBS are still more in the potential stage than we in the Bureau of the Budget would like. No civilian agency has as yet installed a complete PPBS system, and the results of good analysis are only beginning to come through. Nonetheless, the skeleton of program budgeting exists in many agencies, good analytic work is now in process, and there has been a noticeable shift in administrative thought patterns towards an out-put oriented frame of reference. These advances, together with the analyses which have been completed, indicate that our original hopes for the potential benefits from PPBS were not unwarranted.

This optimism should not obscure the difficulties. While the basic theory of program budgeting is straightforward, its application is often challenging. The first and one of the most difficult tasks of program budgeting is to define the program objectives in specific terms capable of being analyzed. The programs of the Federal Government do have outputs, regardless of whether we can now define them.

To help the policymaker confront the choices that face him as intelligently as possible, it is essential that we be as specific as possible about program objectives. At the same time, we must not miss the real import of many programs by confining our attention only to dollars and cents measures that are quantifiable at our present level of knowledge. We need careful analysis of objectives in all fields, using the numbers insofar as possible, but keeping in mind those objectives for which we have no quantified handle at present.

Once objectives have been specified, it is necessary to develop better indicators, or measures of effectiveness, which show how well or how poorly, we are doing. This is more than a matter of assuring maximum efficiency in achieving some given objective. There is no immutable law that a government program cannot have a negative output; without good measures of effectiveness we cannot even be sure that a program is going in the right direction. Again, the formulation of such measures is not easy, and it would be naive to suggest that we can develop simple measures of effectiveness in education, health or agriculture when the objectives in these areas are quite complex. However, the very complexity of the objectives indicates the necessity for sophisticated, rational indicators. It is in precisely this kind of complicated area that our intuition is most likely to fail us.

Help Shape Efforts Toward Objectives

In a complex program area it is not easy to develop and analyze all of the alternative possible ways of achieving a particular objective. It requires great imagination, and freedom from preconception, bias and inertia. Nonetheless, we cannot choose the most productive alternative if we do not assess all possibilities that are within the area of possibility. These challenges can be met, and are being met.

As our sophistication and ability increases, the large scale benefits of PPBS will follow by two basic routes. First, the use of PPBS will help agencies identify inefficient or unproductive programs and eliminate or renovate them. Each such change will result in either significant direct savings or increased return on government expenditures. Secondly, most agencies of the Government are comprised of many diverse and relatively small elements which produce a number of intermediate and final outputs. Each of these elements is susceptible of analysis in systems terms as a part of the broader effort. By providing a better framework for small programs or elements of programs in a systematic way, PPBS can help us make large numbers of individually minor changes which result in substantial total benefits.

A few examples of current applications of good program analysis to Federal activities will help show the range of the payoffs from PPBS. These have been chosen deliberately to show a variety of context and type of benefit. They should be taken as illustrations, not as a catalogue.

Heads PPBS at BoB

Mr. Fred S. Hoffman, Assistant Director, Bureau of the Budget. Mr. Hoffman was formerly Deputy Assistant Secretary of Defense (Strategic Programs)

Improved Flood Control

For many years the Federal Government has been involved in trying to mitigate flood damage. The conventional approach to this problem has been to construct dikes and dams without regard to possible alternative solutions. By 1965, Federal expenditures for flood control structures were about $500 million annually. Nonetheless, losses caused by floods had increased to the point where they were estimated to exceed $1 billion per year.

Under the sponsorship of the Bureau of the Budget, a task force on Federal flood control policy studied the problem and prepared a report to the President on improved flood policies. Subsequently, the President instructed the affected agencies to take a number of specific steps which should lead to a more comprehensive and sophisticated flood control program: strengthening Federal information programs which would help state and local governments achieve more economical and orderly uses of flood plains; taking into account flood hazards in location and construction of Federal facilities; and requiring recipients of Federal grants and loans to take action to minimize potential losses through safer site selection and through the flood proofing of buildings. Other steps, such as flood insurance, are still being analyzed in the executive departments.

Although it is too early to identify the results and savings of these steps, all of the agencies involved expect the unified systems approach to flood damage (flood plain management, flood insurance and flood control) to reduce losses by both the Federal Government and by private persons, and to reduce the future need for Federal financial relief to flood victims.

In this flood damage problem exact figures were not available, though every effort was made to obtain quantification where possible. Valuable results were obtained from the systems approach even though rough estimates or guesses were often the only data.

A Better Direction for Research Activity

In a totally different context, the Department of Agriculture has found that program analysis can result in better direction of its research activities. Since the output of basic research is new knowledge, it has always been very difficult to establish input-output relationships for this field. The Department tried to solve this problem by defining, in broad terms, the types of new knowledge needed to improve agricultural technology, rural living, and agriculture's contribution to the national welfare. The results of this breakdown were related to the Department's goals and became an integral part of its PPB categories, subcategories, and program elements. The study involved five major steps:

1. Delineation of all identifiable research problem areas. (Logical groupings of these problem areas constitute PPB program elements, the first step in the PPB program-structure ladder);

2. Appraisal of available data to quantify future needs for farm and forest products, including domestic needs and the requirements for expanding international trade and developmental aid to foreign countries;

3. Development of eight criteria which could be used, with appropriate weighting, to analyze the relative importance of each of the research problem areas. These criteria were:

- The extent to which research was related to departmental missions;
- Benefit-cost ratios;
- Scope and size of the area, people, and organizations benefiting from the results;
- Urgency of the problem;
- Contribution to knowledge of the research;
- Probability of success;
- Likelihood of extensive and immediate adoption of results;
- Likelihood that the research would not be done elsewhere;

4. Determination of the relative importance of each problem area, in terms of the eight criteria, by panels of experts who appraised current research input in terms of desired output, and developed recommendations for each problem area in terms of additional input needed to maximize the output of the total program area; and

5. Provision of means to relate data classified in terms of research problem areas to PPB program categories.

This analysis is giving the Department of Agriculture, for the first time, a clear picture of its research programs and of the gaps in them. It has also provided a tool for rapid reallocation and change in the interests of greater effectiveness. This will almost certainly result in either better or cheaper research programs in the future, and will provide top-level management with better information upon which to base decisions.

Allocating Funds Among Forest Areas

The Forest Service of the Department of Agriculture has begun using program analysis in a more conventional setting to determine allocation of certain funds among forest areas. Most timberland will produce greater quantities of more valuable timber if given certain silvicultural treatments. At the present time, treatment funds are divided almost evenly among the four geographic regions. There are now, however, about 14 million acres of timberland in the national forests which are ready for planting or that support stands of young trees which are in need of thinning or weeding. Program analysis has shown that an optimal

Continued on page 55 (PPBS)

FOOD FOR THE FIGHTING MAN

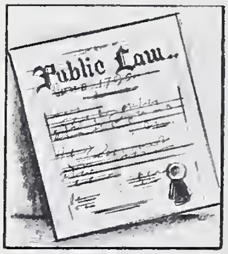
History and Nutrition

The invading hordes of Genghis Khan were a tough, savage lot. Each hard-riding, far-ranging trooper seized his food where he found it and he usually destroyed what he could not take with him. Scorched-earth techniques by the defending populace (burned fields, poisoned water, and slaughtered cattle) may have slowed the Mongol but they did not stop him. He knew how to quench his thirst by sipping blood from a neck vein of his mount and how to make a handful of sunflower seeds go a long way.

Fortunately for the fighting man of today, the quantity, quality and availability of rations has changed tremendously over the years—but not as rapidly as one might surmise. It was not until the early 19th century that European armies began carrying significant stocks of food with them into battle.

Americans reporting for militia duty in the Revolutionary War brought much of their food with them. In many instances soldiers would take leave (sometimes unauthorized) to help with the harvest and bring back more food. However, this home-supply technique soon became impractical (as the scope of the battle widened) and then impossible (as the number of soldiers on leave to obtain food steadily increased). Other approaches were tried—such as herding cattle behind the Army for slaughtering as needed, or sending foraging parties into the woods to hunt for game. There was no single, satisfactory solution. The length of supply lines and the logistics involved in feeding an Army on the move has always been a particularly frustrating problem for military planners.

Nutrition was also a problem. Foraging on a catch-as-catch-can basis does not produce balanced diets. Inadequate and improper foods led to dysentery, disease and death among Washington's troops at Trenton and Jackson's soldiers in the Everglades. Many armies throughout history have had their strength decimated by lack of proper food.



Legislated Bill of Fare

In 1775, Congress prescribed the first ration. The ration has always been defined as "the allowance of food necessary for one man for one day." The first ration looked like this:

1 pound beef, or ¾ pound pork, or 1 pound salt fish—per day
1 pound bread or flour—per day
3 pints of beans or peas, or vegetable equivalent at rate of one dollar per bushel for peas or beans—per week
1 pint of milk at rate of 1/72 dollar—per day
1 pint of rice or 1 pint of Indian meal—per day
1 quart of spruce beer, or cider per man—per day (in lieu of the spruce beer or cider, 9 gallons of molasses per company of 100 men may be substituted—per week)
3 pounds candles to 100 men for guards—per week.
24 pounds soft soap, or 8 pounds hard soap per 100 men—per week.

This ration was not changed until the Civil War. At that time, several revisions were made. Finally, in 1901, Congress delegated to the President the authority to prescribe the Army ration. The present Army ration is set by Presidential Executive Order No. 5952, dated November 23, 1932. This Order lists 39 specific components of the ration.

Air Force Gets Army Ration

The Air Force ration is prescribed by the same Executive Order, although the order itself does not mention the Air Force. The extension to the Air Force occurred with the enactment of the Security Act of 1947 by which the Air Force became a separate service but remained under the same laws and orders as the Army.

The Navy ration was established by Congress in 1794, nineteen years after it had legislated the Army ration. The 1794 law prescribed the Navy ration by item, by day of the week. For example, "Sunday—1 pound bread; 1½ pounds beef; ½ pint rice."

Instead of prescribing specific food items as the Army has, the Navy law lists 14 food groups. Thus, Navy and Army rations vary in type and quantity of food in some areas.

The Marine Corps ration is prescribed by the Navy Ration Law of March 1933. As a result, the Navy and Marine Corps are under the Navy Ration Law while the Army and Air Force are under the Executive Order.

In addition to the food items, the law in 1794 provided for the issue of "½ pint of distilled spirits per man per day or 1 quart of beer in lieu thereof".

There were many variations in the amount of alcoholic beverages authorized with the ration issue. The Army ration authorized by Congress on 30 April 1790 included the following: "Every non-commissioned officer, private and musician . . . shall receive daily, the following ration of provisions, or the value thereof . . . half a gill of rum, brandy or whisky . . ." This change replaced the spruce beer or cider allowance previously authorized. In the early 1800's a prohibition wave started in the eastern part of the country and rapidly gained favor countrywide. By the mid-1800's, the crusade had second thoughts about the authorized issue of spirits to the troops. Consequently, in October 1832, the President directed that coffee and sugar replace the rum, brandy or whisky portion of the ration. The Navy continued to include spirits in its ration until 1842. In that year, spirits were eliminated from the commissioned officer's and midshipman's ration, and the issue to warrant officers and enlisted men was restricted to those over 21 years of age. Later in 1862, the spirit ration was completely eliminated as an item of issue to military personnel.

The Search for Standards

In the early days of the Continental Army and Navy, these different ration entitlements were necessary. However, the transition to modern mission assignments requires a basically identical entitlement for all service personnel. The original basic need for special foods for each service has been eliminated by improvements which have been made over the years, such as improved storage of food, use of preservatives, better logistics support, elimination of certain diseases, etc.

Because of this difference in basic entitlements and other differences in the food service programs of the military services resulting from these entitlements, the Secretary of Defense has established a focal point for food service matters in the Office of the Assistant Secretary of Defense for Installations and Logistics. This office (the Directorate for Food Services) became operational on July 11, 1966.

The main purpose of this office is to develop uniform procedures for an improved food service program for the military services. The first step in this direction was taken in January of this year. At that time, a proposed Executive Order, delegating to the Secretary of Defense the authority to prescribe the Army and Air Force rations, was submitted to the Bureau of the Budget. On March 28, President Johnson signed the order, thereby authorizing the Secretary of Defense to prescribe the Army and Air Force food allowance effective July 1, 1967. The implementation of this order will place the Army and Air Force on the same allowance as the Navy and the Marine Corps. Thus, all of the military services will have essentially the same ration entitlement. Later, after close observation of the food service operations under similar ration entitlements, legislation will be proposed for a uniform law for all services. It is hoped that this legislation will not only provide a single ration for all services but will improve upon the existing entitlement by inclusion of modern food innovations.

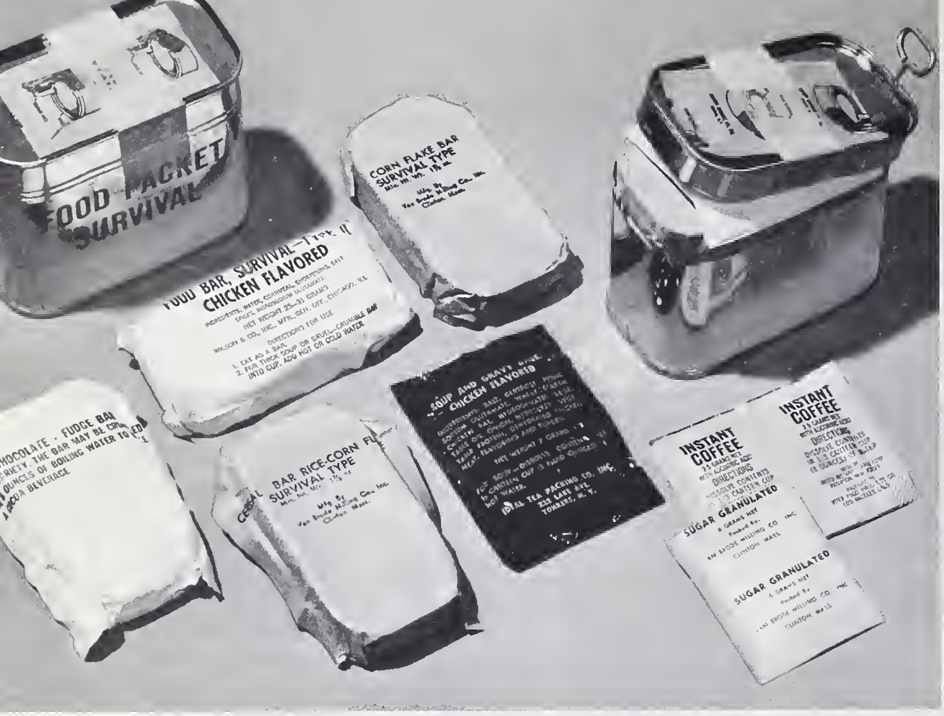
A Four-Pronged Problem

In addition to resolving this basic variance among the services, the Directorate for Food Services plans to review and improve, wherever possible, other areas of food service. For this purpose, four task groups have been formed. These task groups (made up of experienced food service representatives from Army, Navy, Air Force, and Marine Corps) will analyze food planning, accounting and reporting, facilities and equipment, and personnel policies.

The food planning study embraces all aspects relating to food, menu and recipe planning, nutritional research, development and testing of new foods and feeding systems, and testing the acceptability of food items. This effort will result in our servicemen getting the best and most modern food possible.

The accounting and reporting study covers methods of improving mealcount procedures, the standardization

Enlisted dining hall at Shaw Air Force Base, South Carolina emphasizing self service salad bar.


FOOD PACKET SURVIVAL
CORN FLAKE BAR SURVIVAL TYPE
FOOD BAR, SURVIVAL CHICKEN FLAVORED
SOUP AND GRAVY BASE CHICKEN FLAVORED
INSTANT COFFEE
SUGAR GRANULATED
CEREAL BAR RICE-CORN FLAKE SURVIVAL TYPE
CHOCOLATE - FUDGE BAR

Present day survival ration for the fighting man.

James A. Warren, Captain Supply Corps US Navy, Director, Directorate for Food Service, OSD

of reports, the development of a single accounting system for all services, and the establishment of a single Food Cost Index for determining the value of the daily food allowance.

The facilities and equipment area includes the study of standardizing and centralizing the design and layout of food service facilities—dining halls, bakeries, meat cutting plants, and food service equipment such as potato peelers, dishwashers, etc. In addition, this task group will study the feasibility of centrally procuring maintenance-free items and local procurement of those items requiring maintenance.

Personnel policies include the potential use of civilians in lieu of military personnel, use of contractors instead of civil service personnel, training and classification of food service personnel, and career development.

When completed, these studies will result in improved service to the customer and increased benefits to our food service personnel.

Food for Vietnam

Just how well-fed is today's fighting man?

The Defense Personnel Support Center, Philadelphia, a major field activity of the Defense Supply Agency, is responsible for supplying food, clothing and medical supplies to the troops. Its biggest job right now is to keep the 10,000 mile pipe line from the United States to Southeast Asia full and flowing with food. Despite difficult conditions in Vietnam, including transportation, sanitation, climate, etc., which present particular problems to food service activities, the accomplishments of food service and supply personnel in this area have been unmatched in any previous combat situation. Over 88 percent of the servicemen in Vietnam are served hot meals with fresh meat, vegetables, and other fresh food items. Another seven percent of the meals are hot, using canned foods, and only five percent of the meals are represented by the combat rations which are used only when necessitated by the exigencies of the combat situations. Without question, the present day fighting man is being fed better than any of his historical counterparts.

The Food Service Objective

The military food service program presently represents an annual cost of $1.6 billion in food cost and monetary allowances alone. Compared to commercial practice, this is three and one-half times larger than Howard Johnson's, the nation's largest restaurant and food-service chain. In addition, the program involves more than 5,300 dining halls and employs more than 100,000 military and civilian personnel.

The objective of the Directorate for Food Services is to improve upon the four programs that presently exist in order to benefit:

- The serviceman through better food served under the best conditions possible.
- The food service specialist through improved training and career development.
- The taxpayer by getting the most return for each dollar spent in an efficient program. ☐

Toward Tighter, Leaner ADP OPERATIONS

By **PAUL H. RILEY**

Deputy Assistant Secretary of Defense (Supply and Services)

Office of the Assistant Secretary of Defense (Installations and Logistics)

"*Manage computer activity at the lowest possible cost*"—This was the plain-worded direction in the opening sentence of President Johnson's June 1966 memorandum for department and agency heads. In the Department of Defense, this directive had special significance because of our heavy reliance on automatic data processing (ADP) systems. During the year ending June 30, 1966, DoD activities spent $723 million for the operation of 1,968 computers. Nearly 60,000 persons were required to design, program, and operate these computers. Although computer staffers are normally telling other people how to cut costs, a program of this multi-million dollar scope offers many opportunities for savings in the computer room.

DoD Organized for Hard Look

As a new and dynamic technology, the management of computer systems presents a challenge to the cost-conscious administrator. The computer cost/performance ratios are constantly changing as the state of the art advances. Also, personnel productivity is subject to significant changes when ADP systems are revised or when new computer hardware and new programming techniques are installed.

In response to this challenge, the DoD has been devoting high level management attention to its ADP program. The Secretaries of the military departments and heads of other DoD components have designated senior ADP policy officials to serve as the focal point for ADP policy and for administration of the ADP program within their military department or agency. Under this leadership, we have adopted techniques for better ADP management which assure that these huge, costly and complex operations are subject to the same economy-minded scrutiny as other DoD activities.

We find examples of cost reduction in all areas of computer management: through increasing machine room productivity, improving programmer utilization, making fuller use of existing facilities through sharing, and acquiring computer services at the least cost to the Government.

Improving Computer Room Management

In the past, most managers of ADP equipment installations have learned their trade on the job. Observing this lack of formal training, the DoD established a Computer Installation Management Seminar in 1964 to promote the sharing of knowledge on the best techniques of ADP equipment management. This joint training program is operated for all DoD components by the Army Management Engineering Training Agency. It provides instruction covering computer scheduling techniques and utilization analysis, procedures for developing a standard methodology of machine operations, computer maintenance and rental contract administration, and quality control of computer input and output. This one-week course has been offered in 14 different cities and has been attended by 320 civilian and military personnel with management responsibilities for ADP equipment.

Personnel completing this instruction have been able to carry away new and improved management techniques which permit cost reductions such as discontinuing rental of certain peripheral equipment when a new technique for equipment utilization analysis is employed.

Equipment utilization reviews and re-evaluation of equipment requirements permitted $130,000 in savings in one year at Strategic Air Command bases. Throughout DoD, ADP equipment utilization analyses have resulted in the discontinuance of ADP equipment special devices (optional features) resulting in a decrease in monthly rental.

The installation of metering devices on ADP equipment has permitted the more reliable and accurate computation of rental payments. Improved techniques for scheduling equipment have reduced set-up time and idle time. Hours used in set-up and tear-down involve non-productive activities, such as loading and unloading magnetic tapes and cards. Idle time may involve delay in the delivery of input data when no other filler job can be scheduled. Cost-conscious management has worked to minimize these non-productive hours.

Increasing Operator Productivity

Machine operators have also been enlisted in DoD efforts to improve productivity. Equipment operating standards are developed and incentives are provided to produce up to and above standards. With this objective in mind, one large inventory control point of the Defense Supply Agency, which employs 116 key punch operators, has installed a key punch production count system. Documents requiring key punching are processed in group units known as "batches." By recording data on each batch, such as employee identification, number of cards per batch, elapsed time and error count, a weekly analysis of each operator's performance is made. Each operator's work is posted on a large chart which is displayed in the Key Punch Branch Office. Each calendar quarter, operators who maintain a superior production record for eleven of the first thirteen weeks are presented a special Service Award. This production rating system is also used to identify consistently poor performance.

The production rating system not only helps attain optimum use of key punch equipment and operators, but also promotes quality input preparation through systematic control of operator error rates. Since input preparation expenses are one of the largest single costs in many business applications of computers, there is significant cost reduction potential in such input production rating systems.

Another activity—an Air Force finance and accounting office—reorganized input data handling to permit "production line processing." A continuous flow of standardized data into the computer resulted in less computer interruption and better scheduling. These new supporting procedures reduced employee overtime and allowed equipment rental savings amounting to a net cost reduction of $330,800.

Improving Programmer Utilization

Another significant portion of the Defense ADP costs represents systems analysis and computer program development. During FY 1966 DoD employed over 12,000 computer systems analysts and programmers. With the average annual salary of $9,100, in this DoD occupational group, improvements in the utilization of programmers and analysts can add up in cost savings.

Centralized programming activities have been established throughout the DoD organization in order to design, program, test and maintain ADP systems at less cost. The nation-wide shortage of these skills and the improvement in management control through standard programs have been other motivations for centralizing programming.

Standard procedures for assembling all magnetic tapes needed for a scheduled job reduce time for computer set-up and tape re-run. From right to left in photo, Captain Duane A. Berdahl, Air Force Cost Reduction Action Officer, and Paul J. Hyman, information systems expert in the Office of the Secretary of Defense, check the day's schedule with MSgt Julius L. Cates of the Air Force Data Services Center in the Pentagon.

Instead of each installation being permitted to design, program, test and maintain its own library of computer programs, common data processing functions are identified and centrally programed for operation on computers located close to the scene of operations. In the case of Naval shipyard computer programs, one office (Computer Applications Support and Development Office) at the Boston Naval Shipyard prepares most of the computer programs for all shipyard information systems. All Army Depots operate stock control programs on their computers which are designed, programed, and tested by the Army Materiel Command Systems Support Center at Letterkenny Army Depot. The three Navy inventory control points at Great Lakes in Illinois and at Mechanicsburg and Philadelphia in Pennsylvania are now operating uniform programs developed by the Fleet Materiel Support Office.

A single Data Systems Office at the Air Force Headquarters Command maintains all the computer programs necessary to keep the base level inventory accounting system going on UNIVAC 1050 computers at 150 Air Force bases from the Azores to Southeast Asia. These and other central programming offices permit the computer hardware to operate as near to military operations as necessary while sharing software—programs, utility routines and all aids other than the equipment itself—written by the best talent available.

TSgt Arturo Q. Herrera, of the Air Force Data Services Center in the Pentagon, accounts accurately for machine time by clocking the start and finish of each job.

Encouraging Computer Sharing

Sharing of computers has also permitted substantial costs savings. Each month during Fiscal Year 1966 DoD computer installations shared an average of 13,440 hours of electronic computer time with other DoD activities and with civil agencies. Approximately half of the time shared was on a non-reimbursable basis—with no charge to the borrower. Considering the current average monthly hours of productive use of installed computers, the hours provided through this non-reimbursable sharing program provided a computing capacity equivalent to 20 computers. Had this computer capacity been rented or leased, it is estimated that the Government ADP bill would have been $2.5 million higher during Fiscal Year 1966.

Most sharing arrangements are generally established to satisfy short-range ADP requirements. However, when in-depth analysis of ADP requirements indicates a more permanent arrangement, the cost conscious manager has recognized this. This was done at Hickham Air Force Base when two separate ADP equipment installations were consolidated, saving one officer and 32 airmen spaces in addition to improved utilization of equipment and floor space.

Acquiring Computers at Least Cost

A singularly significant influence on more economical investment in ADP equipment has been the new approach to lease/purchase analysis taken in recent years. It is Department of Defense policy to purchase ADP equipment in those cases where analysis indicates that the system to which the ADP equipment is to be applied will be stabilized for a sufficient period of time to assure amortization of the investment. Lease versus purchase analysis is made initially when the equipment is selected. If the decision is to lease or lease with option to purchase, regular reviews are made thereafter to determine if and/or when purchase of the ADP equipment is advisable.

In Fiscal Year 1962 the Department of Defense undertook its first comprehensive lease/purchase analysis of all installed ADP equipment. Conforming to guidelines established by the Bureau of the Budget each computer was assessed to determine its continuing value in support of Defense programs. This assessment established that many equipments could be purchased with advantage to the Government. With completion of the FY 1966 program, the Department has invested over $400 million in the purchase of ADP equipment. These purchases have resulted in substantial savings in the operations and maintenance appropriations of the Department of Defense.

A specific case illustration provides the best understanding of these savings. The Air Force purchase of 13 large scale IBM 7080's will be completely amortized at the end of calendar year 1967. Beginning in 1968, maintenance costs will be the only expense attributable to these equipments and monthly rental payments totaling $1,000,000 will be avoided. Twelve of these IBM 7080's are now scheduled for retention until June 1970.

The above discussion indicates the ways in which Defense managers are getting the most out of each dollar spent in ADP systems. Inside the machine room or in the supporting clerical and professional activities, no activity in the new and dynamic ADP program is immune from the principle of cost reduction. ☐

IRS—INCREASED REVENUE SAVINGS

By **SHELDON S. COHEN**
U.S. Commissioner of Internal Revenue

Creativity and Flexibility Encouraged

The Internal Revenue Service operates the largest and most complex tax system in the world. In fact, IRS ranks in size with the 100 largest U.S. corporations. We employ over 60,000 people—including more than 15,000 accountants, 600 lawyers and 10,000 other professionals.

Considering our size and the scope of our mission, it is not difficult to understand why our managers and supervisors have readily accepted the Bureau of the Budget challenge that: "Government business will be conducted in accordance with the same exacting standards that apply to the most expertly managed private business." As a matter of fact, many of us feel that the Revenue Service is more effective than private business in some areas of management.

The theme of personal stewardship of public funds and excellence in the public service has become an accepted way of life within the Revenue Service. In Fiscal Year 1966 alone, specific actions taken to improve efficiency and reduce costs resulted in tangible savings of $14.4 million—nearly 12 percent over the goal of $12.9 million.

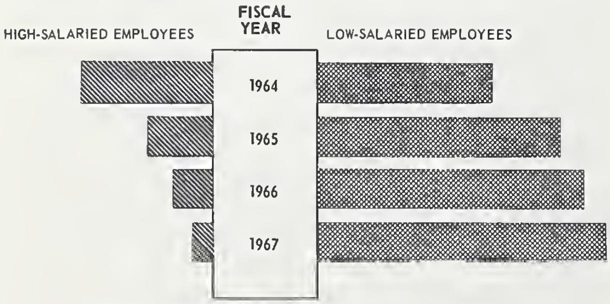
Looking ahead, we anticipate a continuation of outstanding results from cost reduction and management improvement efforts being taken at every level of management. Such efforts range from a singular employee suggestion at a local field office to top level management studies of great scope and complexity. But, we attempt to make all IRS employees cost conscious by encouraging creativity and flexibility.

In our cost reduction efforts at IRS we interpret these terms as:

Creativity—the production of new ideas and development of better ways of doing things.

Flexibility—the capacity and readiness to accept and adjust to needed changes.

MANPOWER TRENDS IN TAXPAYERS ASSISTANCE— *Use of lower salaried taxpayer assistors and temporary employees saves money and releases technical manpower for full-time duties.*



ESTIMATED CUMULATIVE COST REDUCTION = $1,112,250

Executive Development

One of our most productive programs, since its beginning in 1955, has been the IRS Executive Selection and Development Program. In this program, individuals, selected for their executive potential through competition, receive broad training in Revenue Service functions and management techniques. We then expose them to six months of intensive managerial situations in our field offices and at the National Office, through "desk side" assignments with IRS executives, seminars with Federal officials, and in-depth discussions with leaders in many fields. Upon completion of the course they are reassigned to key executive positions with the Revenue Service.

This program has graduated one hundred and eleven carefully chosen candidates, and 100 of these continue to serve the public as IRS executives—including two as Regional Commissioners and 29 as District Directors. To illustrate the competition in this program, last year we received 250 applications from qualified applicants within the IRS and from other interested government employees. Eight were chosen for the class.

It is difficult to determine true dollar savings from this management development program. However, we are certain that the program contributes to improvements in operations and efficiency by upgrading managerial and executive skills.

In a recent inspection of IRS personnel management, the Civil Service Commission said: "The Internal Revenue Service is a well managed, efficient, smoothly functioning organization." The CSC evaluation added that "the high degree of effectiveness of its personnel management policies and practices is a direct reflection of:

—The strong interest and involvement of top management in improving the efficiency of the Service by improving the quality and productivity of its manpower;

Commissioner of Internal Revenue Sheldon S. Cohen (center) confers with Clinton L. Walsh (left), Director of the IRS Operations Division, and Donald G. Elsberry, Director of the Systems Division, as computers process tax returns.

—The high competence of the Service's line and staff managers."

Similarly, we have programs emphasizing work improvement and the development of supervisors and managers.

A New Dimension

Among the management systems developed and installed by the Revenue Service to improve management and reduce unit costs, the automated system for processing tax returns is the most important and surely the best known. This year headlines across the country proclaimed—"All Individual Income Tax Returns Processed Automatically." This year for the first time the IRS automatic data processing is fully implemented and handling all business and individual tax returns. This highly sophisticated system has become a reality just five years after the pilot operation was initiated in the Southeast Region.

The benefits of the ADP in cost reduction for the Revenue Service are manifold, and many will not be realized until the system has been operating "full power" for a few years. But, the computers do identify non-filers, verify data on returns, check outstanding accounts before issuing refunds, stop duplicate refunds, match information documents with returns, and help classify returns for audit.

In 1966 IRS realized approximately $25 million which was attributable solely to the ADP system. Our tax system in the United States rests on self-assessment—ADP insures fair and efficient processing of returns for all taxpayers. In fact, with ADP we not only can determine that all taxes that should be paid are paid—but now we can provide more uniform and more efficient processing of taxpayer returns. It is estimated that we would require more than 12,000 employees to accomplish the job we are doing today if we had not installed our ADP system.

Savings through ADP

But, to give some more concrete examples of the savings gained through the ADP system:

The computers in the seven IRS regional service centers are programmed to identify tax returns that are most likely to contain errors or have characteristics that indicate the need for further examination. The returns so identified by the computer are then checked by an experienced examiner who selects those most in need of audit. This preliminary computer screening greatly reduces technical time used in selecting returns for audit. We are now developing more sophisticated techniques to screen returns through the use of computer-applied discriminant functions. These preliminary tests in this area indicate we may be able to increase our audit efficiency by as much as 20 to 25 percent when these systems are fully developed.

We are not content to rest on our achievements. Already we are refining the ADP system to take advantage of recent technological improvements.

For example, originally each block of 100 or fewer returns and documents to be input to the master files was controlled by punching a master block control card for total number of documents and dollar total. Then, after key-punching and conversion of input to tape records, each card was manually checked for good input records, error records or rejected input. However, now these manual operations have been redesigned and programmed in computer runs to control all input

NEW DIMENSION IN TAX ADMINISTRATION—This year, for the first time, automatic data processing (ADP) in seven IRS regional service centers and the National Computer Center at Martinsburg, W. Va., is speeding the flow of all individual and business income tax returns. This highly sophisticated computer system has saved many dollars in processing of tax returns, with the added benefit of freeing IRS employees to provide more service to the taxpayers.

data faster and more accurately. When this improved system is fully operational in fiscal 1968 total annual savings will be about $509,000.

Rapid Data Retrieval

We are developing another new system which will utilize machine capabilities for rapid retrieval of data on taxpayer delinquent accounts and taxpayer delinquent return investigations. This system will use data already contained in the ADP master files, or other areas of machine operations. This method will replace more costly manual activities, and therefore release personnel to perform other duties. When the system becomes operational, we expect to realize annual savings of about $250,000.

A direct entry system is being developed to eliminate punch cards and most key verification of tax returns and related document input in the ADP service centers. We are now conducting a pilot test using equipment capable of verification at the time of transcription for high speed input into the computer. Our estimates at this time place savings from this system at about $1 million per year for each of the seven centers when direct entry is operational—or a savings of $7 million per year. This savings estimate is based on eliminating verification equipment and operators, reducing computer processing time, and reducing equipment space needs.

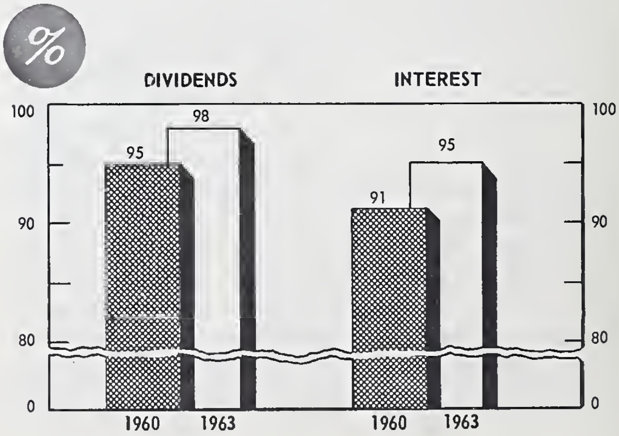
With the transfer of returns processing and revenue accounting from 58 District Offices to seven regional service centers we sought ways and means to eliminate unnecessary handling and remailing and to provide faster service to taxpayers. The answer was for taxpayers to file returns directly with the regional service centers, rather than with our District Offices. As a first step, procedures were developed for direct filing of only those tax returns on which refunds were claimed, and in fiscal 1966 this resulted in savings of $113,000. We expect to attain maximum benefits from this procedure as a result of recently enacted legislation which allows us to require direct filing of all returns at regional service centers.

Our cost reduction and management improvement actions are certainly not confined to the implementation of the Revenue Service's automatic data processing system. For example, we are continually looking for and developing improvements in our organizational structure.

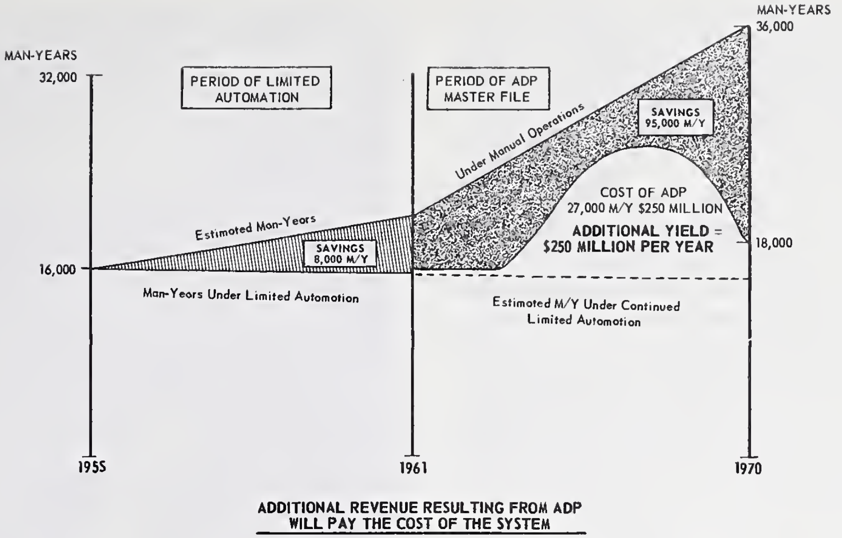
Reorganization Savings

In fiscal 1966 we consolidated the New York and Northeast regional offices into a single office—the North Atlantic Region. In this shift we sought to bring about a more uniform level in the size of the region and volume of tax returns handled and to reduce overhead expenses. From this merger IRS saved $893,000 in fiscal 1966, and, additional savings of $257,000 are expected in FY 1967 with continuing cost reduction of $1 million annually thereafter.

Also, during this past year, a number of changes were made in the Alcohol and Tobacco Tax organization in the field to promote efficiency and economy in operations. Branch offices at Buffalo, N.Y.; Charleston, W. Va.; Omaha, Nebr.; and Milwaukee, Wis., were closed after it was determined that these actions would



PERCENTAGE OF TOTAL RECEIPTS REPORTED ON TAX RETURNS—Improved compliance with dividend and interest reporting by individual income taxpayers between 1960 and 1963 resulted from a better informational system, continual taxpayer education, and publicity on the Revenue Service's ADP system.



This chart of IRS data processing man-year requirements compares ADP with manual operations.

not detract from A&TT operations or law enforcement activities.

The Revenue Service is reducing the number of office collection locations from 180 to 90. Consolidation of these offices results in increased efficiency through use of mass processing techniques in handling delinquent accounts, while reducing supervisory overhead. We estimate savings of $590,000 in fiscal 1966 and $856,000 in FY 1967. No taxpayer inconvenience is expected as these offices handle their work by means of correspondence.

Service to Taxpayers

Many of the actions which we undertake to improve service to taxpayers have implications for cost reduction and management improvement. Consider these examples:

As a means of providing better service to the taxpayer, we are trying a new telephone system in three districts. Telephone inquiries originating in outlying areas where the volume of inquiries does not justify a full-time assistor are channeled into District headquarters toll-free. This permits our technical people to be relieved from the tax assistance job and to spend their time in more productive areas. The handling of the calls at one central area allows for efficient use of manpower which offsets the telephone costs.

IRS expects to save an additional $330,000 in Fiscal Year 1967 through expanded use of temporary employees to perform certain taxpayer assistance duties. Tests conducted in 1965 and 1966 showed these employees could perform duties that were formerly handled by higher salaried technical employees. This year 150 temporary employees are releasing 125 technical man-years for more productive use.

During the 1965 income tax filing period we received more than two million inquiries requesting information on deductions allowable for state and local sales taxes and gasoline taxes. We responded quickly to this obvious information gap—in 1966 the Revenue Service printed sales and gas tax deduction tables in instruction booklets accompanying income tax returns. As a result, inquiries on these topics were reduced by more than half. By estimating each taxpayer inquiry at two minutes of the time of a GS–7 employee, we save over $200,000 annually.

Management Procedures

Through a variety of improved *management* procedures, appellate conferees in branch offices throughout the country have been able to increase the average number of cases handled, without a decrease in quality. In fiscal 1966, 33,733 cases were closed as compared to 29,814 in fiscal 1965. Two factors contributed to these results. A program of training managers, supervisors and conferees was responsible for part of the improvement. The increase of dictation procedures and the use of dictating equipment by the conferees contributed substantial savings of time. This increase in productivity resulted in savings of $969,000 in Fiscal Year 1966. Substantial additional savings are expected this year and in future years as a result of the continuing high productivity level.

In 1965, the Internal Revenue Service also revised procedures for processing cases involving a refund or credit in excess of $100,000. The statute requires that each of these areas be reported to the Joint Committee on Internal Revenue Taxation. The new procedures eliminate special examination requirements and review of agreed cases by regional appellate offices and by the

Office of the Chief Counsel. This change accelerates processing refunds by four to six months with a reduction in interest costs of $2 million per year. This refined review process saved approximately $400,000 in fiscal 1966 in manpower costs and such savings are expected to recur annually.

As another means of reducing costs, IRS has developed more effective procedures in connection with enforcement action on individual taxpayer delinquent accounts. Instead of proceeding with enforced collection of certain accounts, these accounts are held in abeyance until offset by refunds to the taxpayer at a later date, or until the taxpayer's liability reaches a predetermined amount. Savings from partial implementation of this procedure in fiscal 1967 are estimated at $525,125, with additional savings expected in FY 1968.

Incentive Awards

In our Incentive Awards Program, an unprecedented volume of employee suggestions to improve operations and effect economies were received, processed, and recognized with cash awards last year. Through this active program at IRS savings of approximately $2.4 million were realized in Fiscal Year 1966.

In 1966 the records and paperwork management program continued to make significant contributions to the cost reduction efforts of the Revenue Service. During the fiscal year about 272,000 cubic feet of inactive records were either retired to Federal records centers or destroyed. Removal of the inactive records from office-type space resulted in savings of almost $940,000 by making this space and file equipment available for reuse.

Effective Procurement

Office machine procurement is another area where we feel we have been prudent stewards of the taxpayer's money. Having determined the office machines needed to do an effective job, our procurement people then applied the following procurement techniques to acquire the equipment at the lowest possible cost:

—Establishment of purchase agreements under which IRS field offices may buy office machines at quantity discount prices.

—Consolidation of requirements under one order with the award of the total quantity going to the lowest bidder, and,

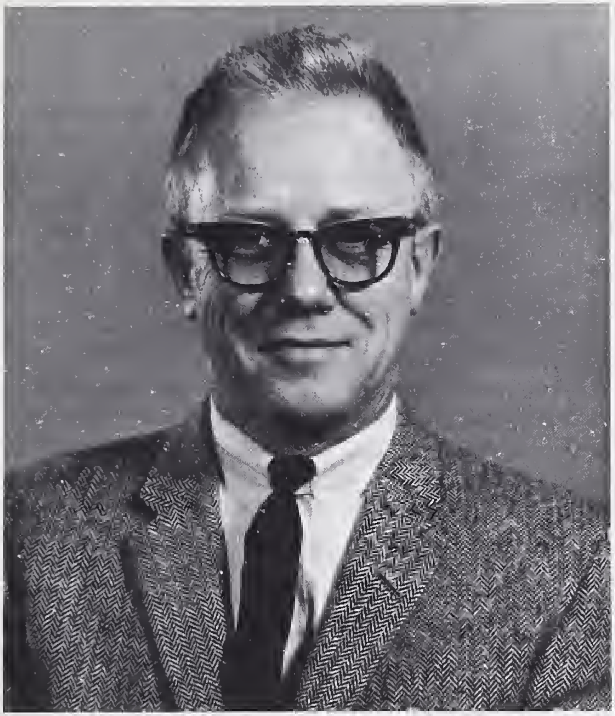
—Prescribing new items of equipment or modifications to equipment already on the market by drawing up specifications which the manufacturer fills, and then having these put on the GSA schedule.

One-time savings to IRS as a result of these actions was $400,000 in Fiscal Year 1966.

Naturally, I am proud of our past accomplishments, but I am determined to do even better in the future. In the current fiscal year and in fiscal 1968 our goal is to exceed the record savings of last year. This is a goal that challenges the initiative, ingenuity and creativity of all IRS personnel. Our goal must be to originate, develop and implement actions aimed at carrying out all IRS responsibilities more effectively and economically. ☐

TUGS AT PURSESTRINGS

Cost reducers at the Seattle Naval Supply Depot salted their economy toot with a $75,000 saving by replacing commercial tugs with Navy tugs (photo) to tow fuel barges to installations in the Puget Sound Area. The economizers plugged gaps in spotty schedules of Navy large harbor tugs by keying fuel shipments to slack-time periods. Even a Navy-owned auxiliary ocean tug (USS TATNUCK) pulled its weight in the total-use campaign by hauling a fuel barge from the depot at Seattle to NAS, Whidbey Island.



By **GEORGE W. BERGQUIST**

Deputy Assistant Secretary of Defense (Management Systems Development)

Office of the Assistant Secretary of Defense (Comptroller)

BETTER SYSTEMS FOR BETTER MANAGEMENT

The Complex Defense Management Job

Management of the Department of Defense has been an intensely popular subject for study and discussion since the day it was founded. The sheer size and vital importance of the defense effort have probably been the main reasons for this interest. By any standard of measurement the Defense establishment is enormous, with more than three million active duty military personnel, more than a million civilian employees in this country, and over a quarter of a million abroad. The proposed Department of Defense budget for the coming fiscal year is $73 billion. This represents a significant portion of the Federal Budget. The economic importance of defense effort is great and it has multiplied during this era of astonishing technological change.

As technology has dramatically expanded, defense decisions have become more complex—a greater number of alternative choices have had to be considered; and many of the choices are of such great economic magnitude by themselves as to require very careful consideration and weighing of alternatives relative to national economic and political policies.

Moreover, during this present decade we have witnessed a growing requirement to meet more and different types of national defense needs. We have assumed, as the result of our treaty obligations and moral commitments, a need to be responsive to many more contingencies throughout the world.

Systems Synthesis via Financial Management

All of these factors have led to an increased emphasis on the systems we use for managing our defense effort. The Department over the 20 years of its existence has made considerable progress in developing effective management systems in all areas of interest. Much attention, in particular, has been paid to financial management systems, because financial management represents both the foundation and synthesis of most of our other management systems.

Major progress has been made throughout the short history of the Department of Defense, particularly under the guidance of Assistant Secretaries of Defense (Comptroller) W. J. McNeil, Charles J. Hitch, and currently, Robert N. Anthony, to improve our financial management concepts and methods.

Mr. McNeil laid the groundwork for establishing relatively uniform budgets and accounts, property accounting, the use of working capital funds, administrative control of funds, and recording and reporting of obligations.

During Mr. Hitch's tenure the principal focus shifted to the decision-making area. Secretary of Defense McNamara and Mr. Hitch believed that the defense effort should be managed in terms of meaningful national defense objectives. These objectives are tied to a major program structure which allows defense managers to view our forces in terms of program entities, such as the B–52 force, the Polaris force, the Army Infantry Division Force, etc., together with all of their resource costs—personnel, equipment, supplies, facilities, etc., regardless of the appropriation accounts in which they are financed.

Five Year Defense Program

The principal vehicle for these management procedures is today called the Five Year Defense Program. This program structure groups all of the myriad activities of the Defense Department and their related resource costs into a number of broad categories, each related to a major mission of the Department—for example, Strategic Force, General Purpose Forces, Research and Development. Each major program is successively subdivided down to the basic building block called a "program element." Decisions are made in these terms and the Five Year Defense Program shows the consequences of these decisions over the whole five year period (next year plus four).

The programming system provides for an annual cycle of change and update of the Five Year Defense Program through which our major planning decisions are made. The cycle begins with the development of a list of Major Force Oriented Issues (MFOI's) by the Secretary of Defense and the Joint Strategic Objectives Plan (JSOP) prepared by the Joint Chiefs of Staff, and leads to major planning decisions in the form of Draft Presidential Memoranda (DPM), submission of and decisions on Program Change Requests, and the Program Budget Decision process resulting in the preparation of the Defense Department budget for the following fiscal year. In addition to the regular cycle for changing and updating the Five Year Defense Program, decisions reflecting unanticipated developments may be quickly processed at any point in the cycle by means of the Program Change Request (PCR) procedure.

Programming, Budgeting, Accounting—Interface Problems

Data aggregated according to missions (program elements, etc.) facilitate analytical studies, now generally called cost-effectiveness studies or systems analyses, which provide a more objective, rational basis for decision-making. However, these procedures do not in themselves constitute an integrated management system, since they do not provide a means of tracing decisions through the budgeting and implementation phases, and of providing useful accounting information to aid planners in future decisions.

FIVE YEAR DEFENSE PROGRAM

MAJOR PROGRAMS

1. STRATEGIC FORCES
2. GENERAL PURPOSE FORCES
3. SPECIALIZED ACTIVITIES (INCLUDES MAP)
4. AIRLIFT AND SEALIFT
5. GUARD AND RESERVE FORCES
6. RESEARCH AND DEVELOPMENT
7. LOGISTICS
8. PERSONNEL SUPPORT
9. ADMINISTRATION

Until the present, programming has been done in terms of missions (program elements) and all the costs related to them; budgeting has been performed according to Congressional appropriation classifications (e.g., Operations and Maintenance Army, Military Personnel Navy, etc.); and accounting has been in terms of organizational entities. These differences have led to certain problems in our management process:

1. The lack of a common frame of reference has made it difficult to relate approved decisions (the program) to the budget, and to get meaningful management information from the present accounting systems.

2. Our budget classifications have tended to lead to over-centralized management for a wide spectrum of individual items of expense. The consequence has often been a lack of identity between responsibility for missions and control of the resources used for accomplishing assigned missions.

3. We have been generally unable to collect costs systematically for cost-effectiveness analysis of resource utilization. Therefore it has been necessary in many instances to conduct costly, ad-hoc studies to get needed management information which should have been readily available from our regular management accounting systems.

Total-Resource Approach

In order to overcome the problems listed above, we are modifying our programming, budgeting and accounting procedures to achieve consistency and comparability among them, and to allow the use of the operating budget as the main management tool for all Department of Defense activities. Beginning July 1, 1967, it is planned that all DoD activities (with the exception of combat zones) will make use of operating budgets in full-cost program-element terms. Each manager will budget and account for the total resources he uses in doing his job. Attention in the budgeting and review phases of our management will then be focused on total resources, just as it is in the programming stage, and it should be possible to track progress on decisions through budgeting and accounting in equivalent terms back to future decision cycles.

The magnitude of this job is tremendous—in numbers of procedures and policies which have had to be modified, in impact on our managers, and in the numbers of individuals who are being trained for the new procedures. It is possible, however, to delineate four areas in which we have made major changes in order to achieve our overall objectives.

1. Military personnel costs will be budgeted and accounted for by the mission units in which they work.
2. A clearer separation will be made between current expense items and longer-lived investment costs.
3. We will charge all expense items and services to users at the time they are consumed—hence, we need to extend the use of working capital devices.
4. We will have a common chart of expense accounts for budgeting and accounting consistent with the program element structure, which will insure compatibility of data throughout the system and among DoD units.

Military Personnel Costs

The most important single element of controllable operating costs not presently budgeted and accounted for by user units is military personnel. In order to give visibility to the entire operating costs of a unit, therefore, procedures have been devised which require mission units to budget and account for the use of these resources. The number of service, production, and maintenance activities utilizing military personnel services is very great; the military personnel contribution to the "product" of these activities is immense. If their services are not treated as a cost of the activities, therefore, it is not possible to develop a realistic overall picture of resource usage of these activities.

The two basic requirements of this new policy are the following: (1) all services provided by military personnel to a mission/organization will be budgeted for, and will be charged to the unit; and (2) all military personnel (with a few exceptions detailed by the DoD Instruction) will be charged to a program, project, and/or function in accordance with actual performance of duties. Military personnel will no longer be "free" resources; they will be employed through the budget process, and paid for.

ACCOUNT STRUCTURE

	Examples
• PROGRAM ELEMENTS	B-52 SQUADRONS
• ALSO RESPONSIBILITY CENTER (Several Hundred)	BASE OPERATIONS (Offensive)
• FUNCTIONAL CATEGORIES (About 15)	MISSION OPERATIONS SUPPLY OPERATIONS
• EXPENSE ELEMENTS (About 20)	MILITARY PERSONNEL CIVILIAN PERSONNEL
• SPECIAL ACCOUNTS IN A FEW AREAS e.g. • WHOLESALE SUPPLY • FAMILY HOUSING	
• MILITARY DEPARTMENTS FLESH OUT THIS SKELETON	

Purification of Appropriations Accounts

A workable expense accounting system requires a clear separation of expense (current consumption, use) items from investment (long-lived, capital) items, so that each category may be managed appropriately. The present appropriations structure accomplishes this division for most items; however, certain expense items are presently budgeted and accounted for in procurement accounts, and certain investment items are included in the O&M appropriations. As part of our current efforts we have specified criteria for determining whether an item is an expense or an investment.

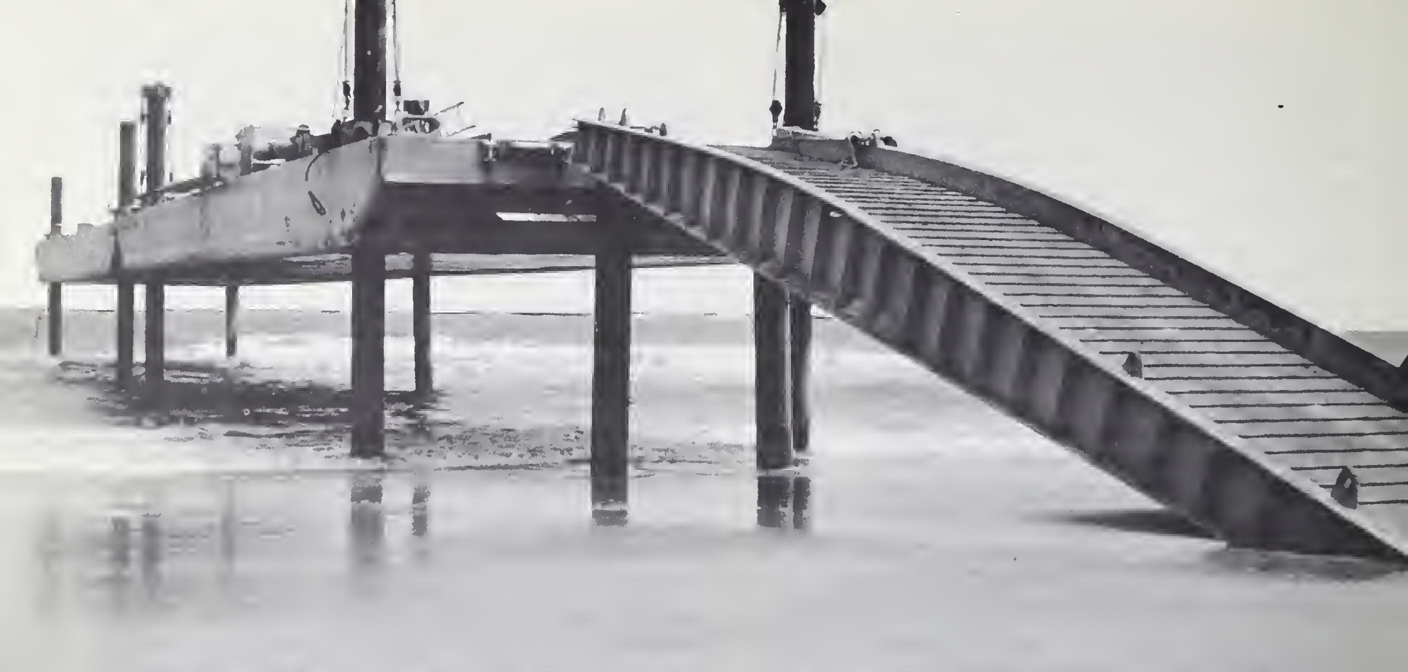
An expense is an item which contributes to the current support of a continuing activity. Expenses include labor costs (military as well as civilian), materials consumed in use and services received by an activity which relate to its current operations. Material is considered an expense when it is consumed upon issue to the final user, or will be consumed shortly thereafter.

Costs associated with the acquisition of equipment and real property are investments. Such costs give rise to long-lived assets from which benefits will accrue to DoD activities over a long period of time, and which should not therefore be charged as an expense to any one year's operations when acquired. By maintaining a clear separation of expenses and investment costs, it is possible to differentiate between those costs which a manger can influence, and those over which he has little control.

Working Capital

A central feature of our resource management system is that all activities are to be charged with all the resources they consume, at the time of consumption. An expense occurs when and where the element of cost (material, supplies, services, labor, etc.) is consumed, i.e., where it is used for the benefit of a goal-

Continued on page 60 (SYSTEMS)



THE AMMI PONTOON

EASES THE LOAD—Here two Ammi pontoons are connected and elevated above wave level to permit loading or unloading from a barren beach. A temporary ramp has been installed so that cargo trucks can gain access to the pier from the beach.

Navy's New "Instant" Harbor Facility

The Navy is whipping up instant harbors from a one-item batter that serves 28 purposes.

Want a causeway—one that can be raised on its own legs to form an offshore loading platform?

What about an elevated pier for transferring cargo from ship to shore? Or a self-propelled lighterage ferry, floating fuel tank, marginal wharf, warping tug, floating crane platform, or drydock? Or a bridge for river and swamp crossings?

Well, sir, try the Ammi pontoon. It will turn the trick nicely, quickly, and at less cost.

The Ammi pontoon is named for its top designer, Dr. Arsham Amirikian of the Naval Facilities Engineering Command.

1. Concept

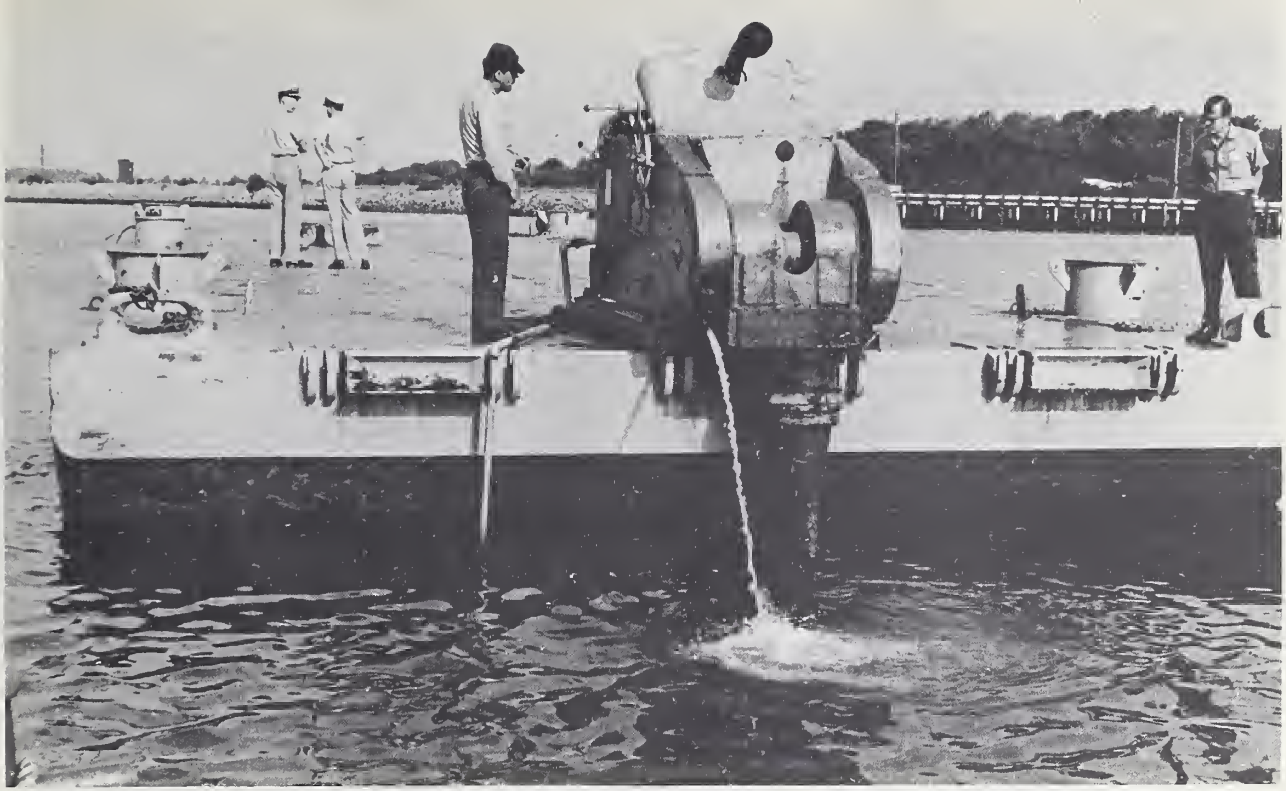
Born of the exigencies of the logistics of the Vietnam war, the Ammi pontoon brings a new solution to the many problems arising on a waterfront where normal harbor facilities are lacking and where prevailing shallow-depth water renders the shore inaccessible to deep-draft vessels.

2. Features of the Pontoon

In general appearance the pontoon looks like a small commercial barge. It has a prismatic body 28 feet wide, 5 feet deep, and 90 feet long with simple raked ends. It differs, however, from the well-known commercial craft in the following features:

(a) the deck is flat and rigidly framed, providing strength to sustain traffic from 20-ton trucks or 60-ton treaded military vehicles; (b) it has the strength for sea tow and, through its interior watertight compartmentation, it is safe and stable—even under certain damage conditions; (c) six cylindrical collars, located two at each end at mid-span—and extending from top deck to bottom shell near the side periphery, provide openings for mooring spuds or support piling; (d) it can be raised out of water through a simple winching arrangement—not requiring mechanical power; (e) a specially devised end coupling detail, consisting of a hemispheric ram and socket held together by an internal chain, provides a strong and secure connection means for interlinkage of the pontoons.

Initially, the pontoon was intended to provide an



Ammi pontoon equipped with an outboard motor to provide propulsion serves as a lighterage barge.

elevated causeway for ship-to-shore cargo transfer. However, one look at the design gave RADM. A. C. Husband, CES, USN, the Chief of the Naval Facilities Engineering Command, ideas for some 27 other applications as well—covering a wide range of harbor structures serving many uses and purposes. He tagged the craft the "Ammi pontoon," and placed the Command's facilities into action for quick development and evaluation of the concept. Four prototypes were developed in-house, fabricated at a commercial shipyard, and tested by the Seabees at Navy Amphibious Base, Little Creek, Va.

It was a fast job. The project was conceived in March 1966 and prototype evaluation was completed in July. In January 1967, less than a year after the concept, the first group of pontoons had already been delivered to Vietnam and were being placed into service.

Additionally, the pontoon features novel rib framing—called a "biserrated orthotropic" system.

The normal or conventional orthotropic system consists of an assembly of plate and stiffener ribs. The rib is formed by a strip of plating bent into a channel shape. The sides or webs of the channel are inclined outward. When such members are connected along the upper edges to a plate, the resulting assembly is called an "orthotropic" deck. The arrangement offers great flexural strength and is utilized in the framings of bridge floors. The superior strength is derived from the torsional stiffness of the channel and its provision of a double support for the plate. In conventional systems of framing, as utilized in ships and other floating craft, stiffeners would consist of single-web members which do not possess these advantages.

In the Ammi pontoon framing, the benefits of the orthotropic system are further enhanced by serrating the connecting edges of the channel ribs. By this detail, the extent of welding needed for jointing is reduced, its quality or efficiency improved, and the weight of the member decreased by an amount equal to the removed metal from the serration openings. However, since members with serrated edges can be obtained from a wide plate cut to the pattern, the edges would "dove tail" in the adjacent strips and thus no waste will result. Then the reduced weight of the member by serration will also represent a corresponding saving in the framing material and cost.

The extent of savings will vary in accordance of the depth of serration. For this purpose, Dr. Amerikian uses the analogy of "stretching" a plate of a given width d to one of $d + c$, where c is the height or depth of serration. This stretch or increase in width may be as much as 40 percent and, in most cases, will vary from 20 to 30 percent.

The serrations provide three further advantages:

(1) They reduce the amount of welding needed to join the edges of channel to the plate by as much as

RADM A.C. Hubbard—he saw the potential.

Moored Ammi pontoon serves as a floating dock.

one half. (2) Through the openings in the two sides, which occur in a staggered pattern, it is possible to deposit backing welds in the interior and thus have full penetration or efficiency welds. (3) The openings also provide accessibility for inspection and maintenance of the interior surfaces.

3. Range of Applications

The pontoon could be used either singly or in multiple units—depending on the intended function and deck space requirements. In either category, it can be afloat or supported on piles. The flotation can be free or captive on moorings; and, in some cases, the floating units may be linked together. Within this broad scope, the applications would cover a wide range of harbor and waterfront facilities structures, including: floating or elevated piers and causeways; marginal wharves; lighterage and work barges—adaptable to self-propulsion; floating POL tanks; small craft floating drydocks; and floating or elevated sea platforms for numerous uses.

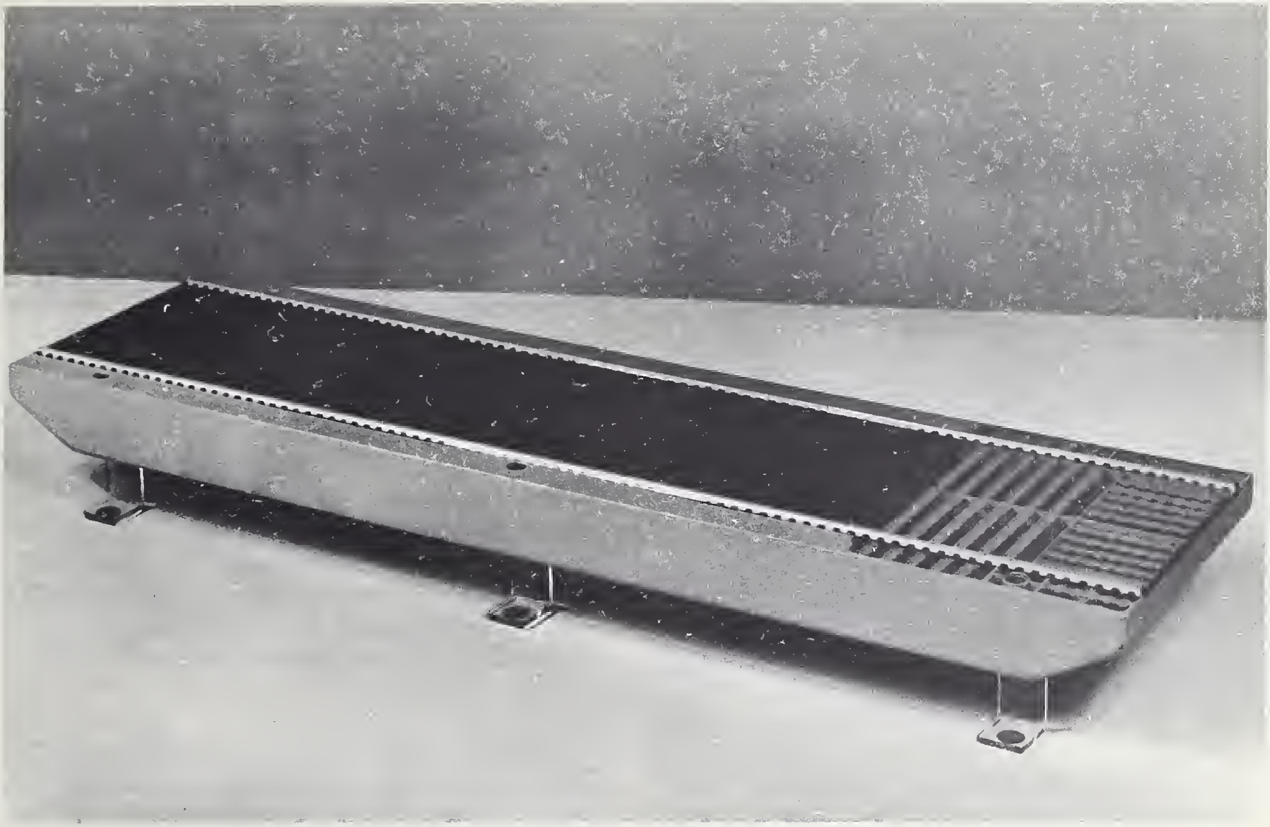
4. Advantages and Savings

The primary advantages of the pontoon is that it provides a versatile component which can be prefabricated and installed in position with a minimum of on-site labor. It is made adaptable for knockdown shipment—through a series of relatively simple panels or sub-assemblies which can be put together by welding at or near site of destination. In critical areas of operation, where on-site construction presents difficult and onerous problems, the pontoon becomes an indispensable means for the needed facility. In most instances, it will provide a unique solution which cannot be obtained otherwise—regardless of cost.

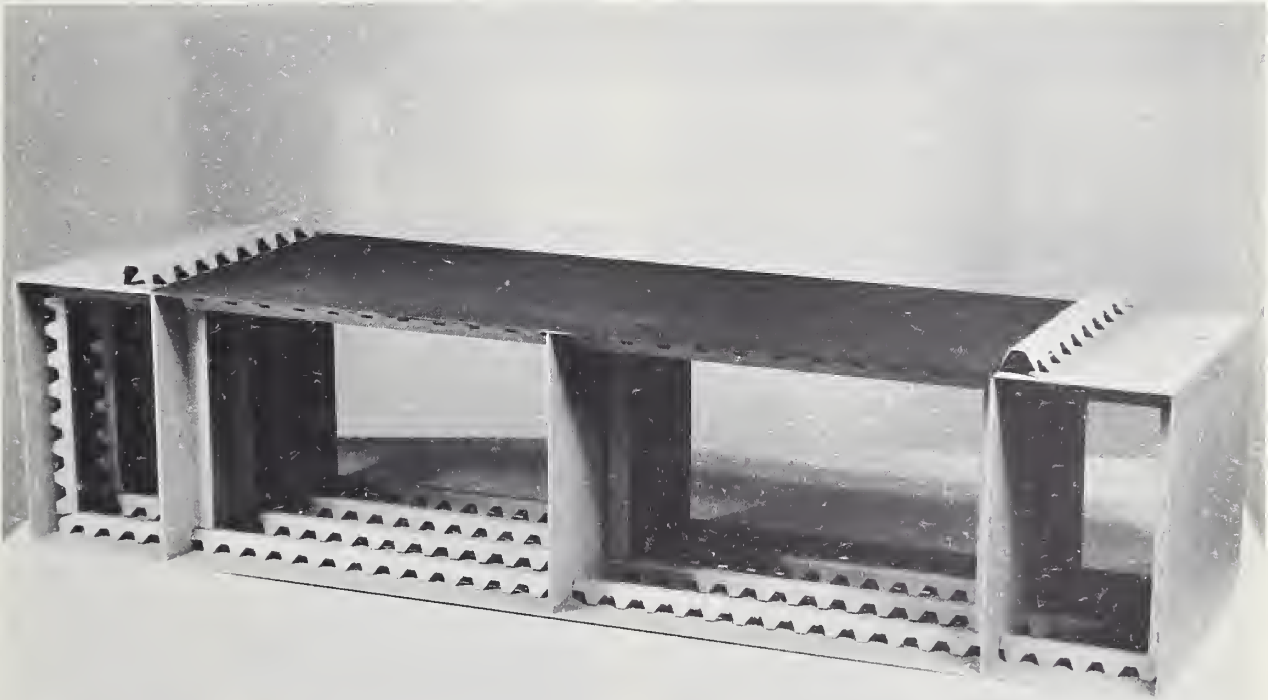
Aside from intangible benefits, the use of the pontoon results in large savings in time, materials and cost of construction. The unusual framing system is idealy suited for mass-produced prefabrication and, hence, the time element is controlled by planned procedures and operation. As yet, actual figures of time savings are not available, since no provisions were made to obtain such data in the initial two procurement contracts of the pontoons. However, with some additional production experience, it is believed that optimum reductions will be achieved.

Savings in framing materials are traceable to two sources: (1) efficiency of the over-all design, that is, the framing lay-out, the analysis of structural response, and the proportioning of the sections; and (2) the use of "biserrated" ribs discussed above.

A good way of comparing structural weights is to express framing weight in terms of deck or platform area, since the primary objective of these structures is to provide a roadway or a loading floor. The Ammi pontoon weighs about 54 tons and has a gross deck area of 2520 square feet. This corresponds to 43 lbs. of steel per square foot of deck.



Model of Biserrated Rib Framed Pontoon.



Model of Typical Cross Section of Pontoon Showing Biserrated Ribs.

Pontoon emerging with LCSR on deck

Two structures of similar function will be cited for comparison. One is the Navy's old pontoon assemblies of World War II fame. A 3 x 15 Seabee causeway assembly, built of 45 units and forming a platform 21 feet by 86 feet, has a gross deck area of 1800 square feet and weighs approximately 73 tons—or 87 lbs. per square foot of deck. The other is the DeLong dock. A large pontoon of this type, measuring 80 feet by 300 feet, has a gross deck area of 24,000 square feet and weighs 1070 tons; that is, about 89 lbs. per square foot.

Accordingly, by the use of the Ammi pontoon there will be a reduction of better than 50 percent in the weight of the steel framing in applications of floating causeways and platforms.

A comparison of relative economy may again be made on the basis of cost per square foot of deck. The lowest procurement figure for the Ammi pontoon obtained thus far is a bid price of $27,000 per pontoon—delivered in subassemblies. Allowing $3,000 for assembly, the cost then would be $30,000, or about $15 per square foot of deck. The corresponding figures for the old Navy pontoon assembly and the DeLong dock are approximately $20 and $60 per square foot, respectively.

The old Navy pontoon causeway, built of relatively small boxes 5 ft. by 5 ft. by 7 ft. in size and tied together by four exterior corner angles, have neither the means to be raised out of water nor the strength to serve as elevated piers or loading platforms. Hence, for such applications, comparison of cost can be made only with the DeLong dock and conventionally constructed piers. Assuming a water depth of 20 feet, wave height of 18 feet, and 20-foot pile penetration, it is estimated that the Ammi pontoon can be installed at a cost of about $12 per square foot. In a recent installation of the DeLong dock, the obtained cost was in the neighborhood of $30 per square foot. Under comparable conditions, if the pier were to be built by conventional methods and materials, the total cost would probably lie between the totals of the cited figures for the Ammi pontoon pier and the DeLong dock.

Impressive as the presently estimated savings are for the use of the Ammi pontoon in numerous contemplated applications, still a greater future potential is seen for the utilization of the "biserrated" rib framing system—not only in floating craft but also in bridges and buildings of various categories. Steel tonnage that could be saved annually would be in thousands and the resulting reductions in cost in millions of dollars.

Dr. Arsham Amirikian, for whom the Ammi pontoon is named (photo below), enjoys an international reputation for his improved methods in structural analysis. His innovations have earned him the Fuertes Graduate Gold Medal of Cornell University (1943), the Lincoln Gold Medal of the American Welding Society (1949), the Concrete Reinforcing Steel Institute award (1952) and the A. E. Lindau award of the American Concrete Institute (1958). He is the first civilian engineer in the DoD to be accorded honorary membership in the American Society of Civil Engineers (1964), the highest honor the Society can bestow upon a member. Government recognition of his endeavors includes the Navy's Distinguished Civil Service Award, Meritorious and Superior Civilian Service Awards, and the Citation of the National Civil Service League. He has served in the Government since 1928.

MOTIVATION OF MANPOWER

Management's Unanswered Challenge

By **ALBERT F. HAMMER***

Discovering attitudes and instilling "want to" response requires human resource R & D—a new technique.

"We didn't meet our objective again."
"I just couldn't get the story across."
"They don't seem to understand what we're after."
"If we only had greater participation."
"Why aren't our people getting behind this?"
"Next time we'll do better; we think we know what's wrong."

Comments like these are made daily at all levels of management—sometimes openly admissive, sometimes shamefully guarded. The supervisory person making such a comment could be referred to a program in quality control, cost reduction, presenteeism, budget consciousness, safety, control and clerical/administrative errors, improved performance, delivery scheduling or any number of similar activities involving *people.*

For each program, relying on people, that achieves success, three others fall painfully short of their objectives. Two more slowly wither and fade away into obscurity. Others, although seemingly working well, could be twice as successful as they are today.

What is the explanation? There may be as many reasons as there are failures; but one big reason is that management, all too often, is not aware of or does not take advantage of the techniques now available for complete motivation of the human resources on whom a program is dependent . . . or, if it uses these techniques, it fails to employ them in proper sequence.

Understanding Human Behavior

Simply stated, people take action . . . or sometimes neglect to take action . . . based upon their psychological attitudes; they are also driven to take specific actions based on their internal motivational needs. These are two closely related factors that determine the response of individuals and groups to programs offered by management; and the degree of response by the people involved invariably determines the immediate and long-term effectiveness of the program.

Fortunately, psychological factors within a group can be identified today. Positive factors can be appealed to; more important, negative factors can be changed; or, if not changed, can be exploited in a way that works toward achieving management's objectives.

This pre-supposes that, in a program such as cost reduction, the psychological attitudes and motivational factors of the group are known. And that leads us to the first prerequisites of effective manpower motivation: KNOW YOUR PEOPLE.

Know your people more intimately than revealed in personnel files . . . or casual work-a-day contact . . . or intuitive inferences. In order to successfully motivate a group, you must know the inner feelings of these people, their key motive drives, the things they accept and the things they reject, their ambitions, attitudes toward management and management policies, job interest and understanding. All of these factors influence performance of the people within the group. Once these factors are known, and it has been established how they relate to job functions and management ob-

---

*Mr. Hammer is associated as an author and lecturer with the Psychological and Educational Center of Illinois, devoted to exchanging research findings in employee psychology and motivation patterns.

jectives for a specific program, the subsequent steps to manpower motivation can be accomplished. For instance:

- More definitive and effective training programs can be prepared.
- More positively programmed supervision can be instigated.
- Systematic, equitable and scientific measurement of performance can be engineered.
- More meaningful achievement recognition programs can be put into action.
- Greater in-depth communications can be utilized.

In this respect, manpower motivation is much like military field operations or hardware systems development . . . a certain amount of preliminary intelligence or R & D is necessary to define the problem and mission before proper action can be started or further money invested. And, what vital resource should management research more carefully than its manpower in order to assure maximum effectiveness?

New Investigative Research Techniques

How can you identify the psychological and motivational factors present when hundreds and even thousands of people may be involved in a given program?

For one thing, new investigative techniques—advances in human relations state-of-the-art which have been undergoing development and testing during the past several years—are now being successfully used to obtain such information on a group basis. These techniques of the clinical psychologist, when applied to a group within a sales, manufacturing, operating, or service situation, are producing some surprising results.

For example, they have been successfully used to forecast the acceptance or rejection of a new management program before it is launched and promoted. Should the investigative research measure a strong negative atmosphere, intelligent direction can be formulated toward preconditioning personnel, anticipating objections and programming communications to fit the motivational situation.

Case in point: A Midwest defense manufacturer, plagued with absenteeism, tried various motivational appeals without success, finally used investigative research to point up several unanticipated reasons for his problem, including: lack of supervisor know-how in dealing with the "new breed" of younger production workers; a strong desire among employees for equitable measurement and evaluation of their job performance; little opportunity for "self-identification" with work projects; and the need for a specific degree and type of recognition when the employee's performance was improved. A corrective program was specifically engineered on the basis of the psychological research findings. Result: Substantially reduced absenteeism and turnover.

Helps Other Motivation Techniques

Another use of investigative research among employee groups is to identify various levels of human behavior within a group for purposes of planning more effective training and supervision programs.

Case in point: An electronics firm faced with deterioration of work standards sought aid of investigative research to solve the problem. A program was designed to determine employee behavioral level within various company plants, then initiate supervisor training in a managerial style that was congruent with the behavioral level uncovered.

As you can see, investigative research can be a basic step in blueprinting other key phases of the total motivational process.

Existing management programs also benefit from the coordinated approach to motivation.

Case in point: A manufacturer, using a motivation program designed for improved performance, turned to investigative psychological research to confirm his beliefs. Instead of confirming evidence, the study showed his program was not receiving in-depth support from the people he expected would be pushing it, was not "engineered" properly, was not being effectively communicated. An overhaul on all three counts has more than doubled the effectiveness of his program.

Provided Motivational Continuity

One of the most common errors committed by those responsible for manpower performance is to bring motivation techniques out of the bag only when they are in trouble. As soon as their version of "motivation" becomes partially successful and the immediate problem is seemingly "solved", motivation is once again subordinated. They forget that motivation is a *continuous* process, a series of management techniques which can be used to advantage each day.

Equitable measurement of performance, for example, is an oft-neglected motivator. Research into conditions affecting employee morale, turnover, and deteriorating work consistently points up the attitude that management is not using an equitable system for determining a person's true value-effectiveness. Three considerations can help overcome this problem:

- Use at least 75% absolute factors in rating performance (i.e., not more than 25% personal judgment factors).
- Make these factors specific and relevant to his job performance, not whether the person doing the grading likes the subordinate due to social, educational, ethnic or intellectual compatibility.
- Consider the employee's "environment" (opportunity to perform) in equal weight with his "effort" (results).

Once a manpower force has been started along the road toward improved performance through proper training plus the assurance that their performance is being fairly evaluated, communications can become a useful source of continuing motivation. Telling people the "why" of carrying out a specific management program is as important as telling them "what" you expect from them. People want to know the entire picture; they want to feel part of the overall operation. So, managers should relate individual assignments with group and total unit assignments to capitalize on pride, competitiveness, team spirit, and other motivators. Investigative research will point up which motive drives are primary ones within a group, how strong they are; and it indicates the appeals that will most successfully stimulate them.

Recognition of Achievement

This is the area of motivational activity that usually comes to mind first when discussing "motivation". Too frequently, it's the *only* thing that comes to mind, in the form of "incentive awards". True, personal gain is a strong influence toward action which is essential to the success of a given program.

But three important points should not be overlooked:

- In addition to personal gain, other motive drives can be effectively appealed to . . . pride, recognition, security, self-satisfaction, etc. . . . as supplements to tangible awards in a properly structured program.
- The method of award is as important as the award itself. Make the recognition for achievement an important event in the eyes of the recipient, his contemporaries, and supervision (extending up through the top levels of executive management). If the award is an incentive award of cash or its equivalent, make it distinctive by keeping it separate from his regular compensation. Too often a recipient and his family confuse an incentive award with other income, and the psychological value of extra award for extra effort is drastically reduced. Make it a separate symbol of achievement recognition.
- Don't overlook the opportunity to include a participant's family in making an appeal to achievement. The influence and encouragement which a family can exert upon a man when they know he has an opportunity for originating a significant (and personally rewarding) cost reduction action, for example, is immeasureable. And, when he is successful, the *recognition he receives at home as an "achiever" is a powerful stimulus toward further attempts at success in the same activity.*

And one more lament frequently has a bearing on the overall effort extended by people. Too often it is assumed that management does, in fact, have objectives. Perhaps they do, but they may not be adequately defined. To be really effective, objectives should meet these four requirements: They must be specific, meaningful, realistic, and, certainly, they must be measurable.

Motivation is Positive

The positive aspects inherent in motivation are contagious. Therefore, these aspects should be continuously encouraged and promoted. The careful matching of the "carrot" with the more traditional "stick" creates a catalyst for action that causes people to approach management objectives optimistically, efficiently, and enthusiastically.

In contributing to the success of programs that depend upon the "want to" response of people, the properly conceived and executed motivation of manpower becomes . . . in itself . . . *a new cost reduction technique.* ☐

ARMY PRODUCES BUMPER CROP

"Turk's head", "monkey's fist", "hawsers", nautical terms used by sailors for centuries, are not unfamiliar to the Army 2nd Logistics Command's Directorate of Terminal Operations on Okinawa.

This organization operates berthing facilities for the large merchant ships that move in and out of the Ryukyuan ports. The Command also provides tugboats for guiding and positioning ships within the harbor area. Each tugboat has a knotted rope "bumper" or bow fender for cushioning impacts as it nudges large freighters into position. The bow fenders, made entirely of knotted rope, were being replaced every three years, on average, until Army's "seamen" came up with a new twist that has already saved $150,000.

The new method uses rubber stripped from salvaged tires for the core instead of rope. The tires are mounted on a special jig for cutting long strips away from each tire. The strips are then woven into a huge crescent which is between five and six feet thick in the center. A block and tackle bends the crescent to fit the tug's bow. The old masters then move in and, knot by knot, they cover the rubber core with a rope mesh and finish the front with a "Turk's head" (woven rope mat). Since the finished bumper weighs about 15 tons, large diameter ropes must be used. Some knots are so large and must be tied so tightly that fork lift trucks are used to pull them into place.

Army reports that the improved bow fenders will last for seven years. Even after that time the rubber core can be recovered and reused. Savings aside, the new type fenders also provide better protection for the tugs, ships and crews.

Major General John G. Zierdt, Commanding General, U.S. Army Missile Command, Redstone Arsenal, Alabama, presents trophies won by the U.S. Army Missile Command in the Industrial Management Society's Ralph H. Landes film competition. Recipients are Mr. R. L. Guard (center), Mr. W. Anderson (right), and Mr. A. E. Harvey (seated). These awards, two "Firsts" and one "Second", were presented following the Society's film competition in Chicago.

COST REDUCTION/ZERO DEFECTS FILMS WIN NATIONAL AWARDS

The U.S. Army Missile Command, Redstone Arsenal, Alabama, captured two "Firsts" and one "Second" in the Ralph H. Landes National Film Competition held recently in Chicago by the Industrial Management Society. The awards, in the form of three handsome trophies, were for three films with themes on cost reduction, zero defects and value engineering.

The film "EDS–0016" (Engineering Data System), under the technical direction of Mr. R. L. Guard, won first place in Group 4, Production Methods Improvement category. The film "Value of the LAW" (light Anti-Tank Weapon), under the technical direction of Mr. A. E. Harvey, won first place in Management Techniques. Second place in this same category was won by the film "Zero Defects—Trademark of the Craftsman" under the technical direction of Mr. W. T. Anderson.

The Cost Reduction emphasis depicted by the film "EDS–0016" covers the engineering data system recently developed by the U.S. Army Missile Command. This system provides engineering with a simplified method for storing and retrieving technical data. This system reduces engineering search-time to minutes by using data microfilm in lieu of drawings and by using an Optical Character Reader to obtain a direct man-machine computer interface.

The film "Value of the LAW" shows the cost reduction potential inherent in the use of Value Engineering techniques in early research and development phases of a weapon system. It illustrates the savings and reduction in leadtime possibilities by searching for and modifying, where necessary, components already in use in existing weapons systems. This film points up the advantages of a wholehearted and enthusiastic support of Value Engineering by all employees connected with research, development and production.

The film "Zero Defects—Trademark of a Craftsman" was developed to motivate industrial adoption of Zero Defects as a management technique for both quality improvement and cost reduction through increased personnel efficiency. This film depicts management, industry, and employee responses to the challenge of Zero Defects.

> *"If Federal agencies were still operating at their 1964 level of efficiency, my 1966 and 1967 budgets would have to be $3 billion higher. These savings mean that we are getting more value for our tax dollars. It means the American people are $3 billion better off. This makes clear why I consider cost reduction so important. It explains why I want every Government employee to think hard about opportunities for cost reduction, and why I want the best ideas publicized for all to use."*
>
> —Lyndon B. Johnson

3–M SHRINKS STANDBY TIME AT NAS ATSUGI

U.S. Naval Air Station Atsugi, Japan, expects big returns from the Navy's new Maintenance and Material Management (3–M) System, according to Commander J. R. LeTourneau, NAS Comptroller and Cost Reduction Coordinator.

Utilizing electric accounting equipment (data processing), management can obtain information on man-hour utilization, aircraft statistics and effectiveness of maintenance procedures.

The data systematize cost accounting in terms of man-hours instead of dollars. The maintenance and aircraft data tell what items were worked on, why a malfunction occurred, how long a job took, what steps were involved in completing a job, etc.

A data processing machine produces summaries that show where time is being wasted.

After implementing the 3–M system at Atsugi, managers pinpointed a waste of man-hours in three areas. (1) indirect labor (2) standby time and (3) absences during working hours.

By diverting indirect labor (those hours used for administration and supervisory tasks) to direct labor (actual work on aircraft) the station showed a saving of over $27,000 during the first quarter.

Almost $4,000 was saved in reducing absence during working hours to attend to personal affairs and over $4,000 in reducing standby time (that time spent waiting to work on aircraft or receive a required part).

The action taken by management resulted in improved manpower utilization which otherwise would have required an increase in personnel of the Aircraft Maintenance Department of 32 men, according to Commander Phillip S. Arp, AMD Officer.

Cdr. Arp went on to say, "We not only saved money during the first quarter of fiscal year 1967 but we also had an increase in production of 25%, due mostly to the improvements we made using the 3–M system."

Machinery Repairman First Class Arnold J. Bickman, AMD, works on the data processing cards which, under the 3–M system, give planners the necessary information to improve maintenance procedures.

Chief Machine Accountant Teodore Capacia operates the Data Processing Machine which is used under the 3–M system at NAS Atsugi and came up with the information necessary for planners to improve efficiency of AMD.

PACK-AND-CARRY SLEUTH TURNS UP SAVINGS

The manufacturer's plans to truck waterproof paperboard from Cincinnati to the west coast for $31,479 did not sound like a bargain to Robert E. Brown, a packaging specialist with Defense Contract Administration Services. He worked out an arrangement with railroad packing engineers to use railroad flat cars with bulkheads and a weatherproof shrouding. This method of shipment—which otherwise would have required 24 big trucks—saved the Government $18,999.

INSPECTION SYSTEM HANDBOOK PUBLISHED

The new DoD Handbook H 51, "Evaluation of a Contractor's Inspection System," is being distributed to Government organizations through the usual publications channels. It can also be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20401, for 25 cents per copy. The handbook contains evaluation guidance based on Military Specification MIL–I–45208A, "Inspection System Requirements."

The Secretary: "INDUSTRY HAS

The White House, Washington, D. C., February 11, 1967— "The attached memorandum from Secretary McNamara tells how American industry is conserving Defense resources. I believe you will find it worth your time to read it. Secretary McNamara states that 75 contractors reported cost reductions of $1.8 billion in two years on their Defense sales. This is a most gratifying response to my request that our Nation's Defense community help us reduce costs." —Lyndon B. Johnson

THE SECRETARY OF DEFENSE
WASHINGTON

8 FEB 1967

MEMORANDUM FOR THE PRESIDENT

Three years ago, you asked major Defense contractors to step up their efforts to reduce costs under Defense contracts. At the same time, you asked me to take their cost reduction efforts into account when making future source selections and in determining profit and fee rates on non-competitive negotiated contracts.

A recently completed analysis of progress under the Defense Contractor Cost Reduction Program shows that industry has responded vigorously to your request.

Participation

Seventy-five parent companies actively participate in the Program, and 183 of their plants or divisions report to us semi-annually on their cost reduction accomplishments. These companies received over 50% of the $33.5 billion awarded in contracts by this Department in Fiscal Year 1966.

Savings

In the two years ending June 30, 1966, these companies reported cost reductions of $1.8 billion on their Defense sales, exclusive of firm fixed price contracts. Savings in Fiscal Year 1965, the first year of formalized reporting, totaled $811 million. Savings in Fiscal Year 1966 totaled $996 million.

Benefits to Defense

These savings benefit the Department of Defense by:

- Reducing payments to contractors under cost-reimbursement contracts

RESPONDED VIGOROUSLY”

- Enabling Defense to share in savings under contracts with incentive-type arrangements

- Providing a lower base of experienced costs for reference in pricing out subsequent contracts.

These contributions by Defense industry are impressive evidence of its concern that the Government receive a dollar's value for every Defense dollar spent.

Cost Reduction Examples

The following examples are representative of the thousands of cost reduction actions being taken by contractors in the Contractor Program.

- Value Engineering

  Douglas Aircraft Division of Douglas Aircraft Company, Inc., reported a savings of $6,191,366 by redesigning the canopy of the TA-4E aircraft. The canopy was reengineered to reduce its thickness, eliminate an unnecessary electric heating element, and reduce the number of seams over the pilot's head from two to one.

- Technical Data

  Western Electric Company, Inc., recently reported the following savings:

  - The preparation of composite parts' lists to utilize repetitive information formerly shown on separate lists saved $113,000.

  - The incorporation of supplemental data on draftsman's layout drawing instead of preparing separate formal documentation saved $757,000.

- Use of Excess

  The Aerospace Group of the Boeing Company reduced costs by $383,137 by screening equipment requirements against excess inventories. One hundred and thirty-nine items of excess equipment, identical or comparable to items needed by requesting units, were furnished in lieu of new procurement.

- Packaging

  The Lone Star Division of Day and Zimmermann, Inc., reported Packaging, Preserving and Packing savings of $1,019,600 for the six month period ending June 30, 1966.

- Modification of packaging specifications to allow use of material already on hand to pack M26 hand grenades and reuse of packing material in which M557 ammunition fuzes were received, instead of procuring additional material to meet the prior specifications, saved $676,024.

- Use of wood skids in lieu of pallets for 105MM cartridges saved $262,400.

. Technical Manuals

Gyrodyne Company of America, Inc., reported a variety of actions which saved $81,200 in technical manual costs in Fiscal Year 1966.

- Elimination of unnecessary symbols on wiring diagrams saved $2,063.

- Preparation of final copy directly from handwritten work eliminated a typed rough draft and saved $6,398.

- Combination of three publications into one saved $1,004.

. Automatic Data Processing

Northrop Corporation reduced costs $350,468 by applying electronic data processing techniques to its purchase order, procurement management information, and materiel industrial and standards systems. Improved utilization of data processing reports permitted the corporation to reduce manpower requirements in one of its groups by more than 35% -- saving an additional $117,540.

. Administration

The McDonnell Company saved $941,120 by a recent companywide campaign against unnecessary paperwork. The drive eliminated 408 automated reports, over 1,200 report copies, 76 manual reports, and 199 forms. In addition, 237 forms were standardized. Fifty-four tons of paper were disposed of by file cleaning alone.

Industry Response

Today, Defense Industry is conscientiously participating in the Defense Contractor Cost Reduction Program. Most contractors consider it imperative to have a cost reduction program to remain competitive and realize fair profits. Many had programs long before the Defense Department Program was started, but all seem to have intensified their efforts during the last three years.

Lockheed Aircraft Corporation is the largest Defense contractor. Lockheed's Annual Report to Stockholders dated March 4, 1966, discussed its cost reduction program:

> "All nine operating companies surpassed their goals in cost reduction. After realizing total savings of $117 million

> in 1964 in the first year of the intensified industry campaign sponsored by President Johnson and Defense Secretary McNamara, we knew that the enthusiasm of the initial push would be hard to sustain. Yet we bettered our 1964 performance with corporate-wide savings of $132 million, enabling us to strengthen our competitive position, pass along substantial savings to the U. S. Government and improve our profits. These savings come from a variety of techniques -- process innovations, automation, computer aids, Zero Defects, value engineering, and more efficient work procedures."

Cost reduction techniques are being applied by companies to their civilian as well as their military work. A Wall Street Journal survey reported that these techniques are also being used by many firms not directly connected with the Defense program. The Vice President for Purchasing of one of the major airlines (not a participant in the Program) recently wrote us:

> "Because of the widespread impact of your program, we are finding broader acceptance for our own cost reduction efforts. Other corporate purchasing departments, I am sure, are finding similar benefits from your program. The American consumer and taxpayer cannot help but benefit from this organized effort to reduce costs."

The Defense Contractor Cost Reduction Program has had the uncompromising support of the top executives in industry and the Defense Department -- I am confident it will continue to receive such support.

Robert S. McNamara

COST CRACKDOWN

This article is excerpted from the WALL STREET JOURNAL *News Roundup* of February 8, 1967. Permission to reprint is appreciated.

Firms Find Fat Has Crept In During Affluent Years

"Boom times with boom sales are always periods when inefficiencies creep in," says John F. Torley, chairman of Dayton Malleable Iron Co. in Ohio.

"We had thought we were running a lean, trim ship," says William Howlett, president of Consolidated Food Corp., Chicago. "But in times of affluence extra expenses can creep in. We find we can always tighten the belt another notch," says Mr. Howlett.

Missing the Goals

Consolidated Foods' goal is to slice $500,000 from operating expenses each of the company's 13 four-week accounting periods. But the diversified food company fell 20% short of its goal during the first four-week period, ended Dec. 17, and executives are looking harder for ways to pare expenses.

So are officials at many other companies that until recently haven't been overly concerned about achieving their cost-cutting goals. Rockwell-Standard Corp., Pittsburgh, is in the final year of a three-year cost-cutting program aimed at slashing $7 million from production costs annually. Only 30% to 40% of that goal was reached during the first two years, but Willard F. Rockwell, Jr., president, says that now efforts to cut costs are "going to become more urgent." Eugene Burke, controller, says, "We've definitely got to meet our goals now."

Some companies are reluctant to talk about cost-cutting efforts. "Many executives, even if they admit to starting cost reduction programs, won't tell you what they're doing or how much they're saving," says a management consultant. "They're embarrassed at how much fat they find."

Embarrassed or not, businessmen are wielding everything from scalpels to meat axes in their intensified economy efforts.

Peanuts and Bananas

"People tend to look too high in their operations to save money, but the peanuts-type cuts further down can add up to big savings," says an officer at Hoover Ball & Bearing Co., Ann Arbor, Mich. "We made a review of phone extensions to see which ones weren't really needed and eliminated 30 to save $2 each per month" in one division, he says. Other "peanut" cuts that Hoover says add up to substantial savings include using a cheaper grade of paper for internal correspondence and switching to a simplified system for numbering vehicle parts it manufactures.

United Fruit Co., Boston, has started making its banana boxes from cheaper grades of pasteboard and glue. "We ship tens of millions of boxes a year and we'll save hundreds of thousands of dollars annually that way," says a spokesman. United figures it is saving another $50,000 a year by buying a cheaper grade of paper to make the pressure-sensitive Chiquita brand labels it sticks on a billion bananas a year. Like many other concerns, United also has clamped tight restrictions on use of office copying machines.

"It's the little things that kill corporate profits," agrees George H. Burns, Jr., president of Systron-Donner Corp., Concord, Calif. Among other things, "expense accounts here will be trimmed," he says. "We have found that telephone calls, trips and personal meetings tend to get out of hand." Many other companies are urging employees to substitute telephone calls for business trips more often and to keep long-distance calls short.

"There's a lot of difference of opinion on how to transport employees," says an executive at Arkansas Power & Light Co., Little Rock. The utility has switched to compact cars for everyone except a few executives, and even top management men are driving low-priced sedans this year. "We found the savings justified replacing our whole fleet," says the utility official.

James L. Barlett, Jr., president of Cosmodyne Corp., Los Angeles, plans to save $50,000 to $100,000 this year by cutting travel, advertising and public relations, budgets—activities which, undoubtedly to the pain of ad and PR men, he calls "desirable but not essential." Smith Kline & French Laboratories, Philadelphia pharmaceuticals maker, recently cut back the schedule of public speaking classes it sponsors as a service to physicians and pharmacists.

United Air Lines has delayed indefinitely construction of an air transportation museum at its Chicago headquarters. United also tried last fall to eliminate movies on transcontinental flights, but resumed the movies a month later after being flooded with complaints from passengers.

Omark Industries Inc., Portland, Ore., has quit supplying dealers with free parts to repair its chain saws, a move expected to save $80,000 to $100,000 a year, says C. D. Hoekstra, who heads the cost-cutting effort. Omark also is eliminating "a lot of paperwork that nobody reads," he says. The company figures it will save $19,000 this year by shipping some tools to Puerto Rico more frequently to cut the need to send rush orders by air freight.

H. Clifton Morse, a Chicago management consultant, advises his clients to periodically designate a day for secretaries, clerks and supervisors to empty their desks and file drawers, return extra pens and pencils to the supply room and throw away unnecessary letters and files. Mr. Morse says one company recently emptied enough file drawers to return 50 file cabinets to the supply room and cancel a purchase order for 150 new cabinets.

Delta Air Lines' president and five division chiefs meet each Monday morning to "check on all capital expenditures down to a $50 chair," says Robert Oppenlander, financial vice president.

Two Hats for the Boss

At many companies, cost-cutting means lopping employees off the payrolls. C–E–I–R Inc., a Washington, D.C., computer service and research concern has fired "some high-priced people we thought were key people," says Herbert W. Robinson, chairman. "We've found money could be saved by having people work double duty—by having them wear two hats."

Saving money sometimes takes the form of major spending to modernize facilities. Pacific Intermountain Express Co., Oakland, Calif., will spend about $7 million on new equipment and terminals this year. Eugene B. Kania, controller of the trucking company, says maintenance expenses were reduced to 10.8% of volume over the past year from 13.4% and that new double trailer trucks permit PIE to "carry 15% more volume for the same cost." PIE also is using time and motion studies to streamline office operations and freight handling.

Some manufacturers are switching to lower-priced substitute materials for their products. A Cleveland company hopes to cut its purchasing costs 10% by substituting aluminum and plastics for copper in the electric motor parts it makes. In Philadelphia, Lighting Corp. of America began substituting aluminum for costly copper in its lighting fixtures and electronic equipment a few months ago. "Now, unfortunately, with aluminum prices rising, we're replacing aluminum components with terneplate, a lead-coated steel," says Julius Friedman, vice president.

Cutting Waste

R. G. LeTourneau, Inc., Longview, Texas, maker of heavy construction equipment, has started making some of its own steel by melting its stockpile of scrap metal. "We're found we have a lot of scrap lying around—machines that have been written off but never cut up as scrap," says Richard H. LeTourneau, president.

Lodge & Shipley Co., Cincinnati machine tool maker, has accelerated on-the-job training for new workers who were wasting too much metal because of their inexperience. "We hope to reduce our scrap by 30%," says William L. Dolle Jr., president. American Building Maintenance Industries, San Francisco, has also increased its training. "When a man thoroughly understands his job he can perform that job in far less time," says a company officer. "For us, cost-cutting primarily means training programs."

But in Pittsburgh, Dravo Corp.'s engineering division has cut costs by dropping some classes. Walter Davidson says the eight-week courses "were instituted as an emergency measure last year when we found we couldn't hire any welders or fitters." He says the classes cost $132,000 and trained 262 workers, but 60% of those men soon quite to take jobs at other companies.

Inventories offer some inviting targets to corporate cost-cutters. Chrysler Corp. is using a new computer system linking its 77 independent suppliers and 26 parts manufacturing plants to its seven assembly plants to cut inventory control costs and avoid parts shortages.

LeTourneau chopped its parts and steel inventories to $14 million from $16 million in two months and plans to keep them "at minimum levels," says Mr. LeTourneau. "We make more operating capital available in addition to saving interest," he says.

Barry Wright Corp., Watertown, Mass., switched from several suppliers to one who makes daily deliveries. "We don't carry nearly as much inventory as before—the distributor carries it for us," says Ervin Pietz, president. Barry Wright also is saving about 15% on purchases of tools and office supplies by buying from fewer suppliers, says Mr. Pietz.

Companies say the key to successful cost-cutting is to make it a continuous effort. A Pittsburgh Plate Glass spokesman asserts crash programs won't work. "With a company of this size, problems arising from short-lived conditions are over before you can get cranked up," he says.

H. W. Wehe, Jr., president of Overly Manufacturing Co., Greensburg, Pa., is currently in the midst of an extensive cost-cutting drive. "By the time we get through reviewing all of our operations we'll be ready to start all over again," says Mr. Wehe. "There will be new ratholes where money is leaking out and we'll have to go after them." □

SUPPLY LINE TO VIETNAM

Soldiers of the 1st Infantry Division survey the situation prior to advancing on Viet Cong sniper positions. Clothing and Equipage they wear were provided by Defense Personnel Support Center.

DPSC Runs Brisk Operation, Speeds Food, Clothing, Medical Supplies to SEA

The View Up Front

"19 October 1966—Bacon and eggs and SOS very good with the Marne Division."

To the casual reader, this remark in the inspection notes of an Army representative who had just returned from an official visit to U.S. Army Europe seems of little consequence. To Sergeant Major W. O. Wooldridge, it is very significant indeed. Wooldridge is the senior noncom of the Army and it is his job to act as consultant to the Army's Chief of Staff on all matters pertaining to morale, health, welfare, training, etc. of the enlisted man. He knows his job and the key signs to look for. He knows that plenty of good food, well prepared, is one of the most important factors contributing to good health and high morale.

A recent letter from a young air commando in Vietnam referred to other items of equal significance. He described how medical supplies had been air dropped to a forward unit that had been caught in a murderous cross-fire. He told about the helicopters that came in and picked up the wounded while the action was still in progress, and about the desperate condition of some of the wounded who were given immediate emergency care on the spot. The young man closed his letter with these words: "Thank God we had plenty of plasma and medical supplies—Otherwise we couldn't have brought all these men out alive."

DPSC's Job

These two vignettes are in a way testimony to the effectiveness of the Defense Personnel Supply Center (DPSC), Philadelphia, a major field activity of the Defense Supply Agency. It is DPSC, under the command of Brigadier General John M. Kenderdine, USA, that has the task of keeping the long logistics pipelines full and flowing with food, medical supplies and clothing.

The birth of DPSC in July, 1965 coincided with escalation of the action in Vietnam. This organization merged the Defense Medical Supply Center in New York and the Defense Subsistence Supply Center in Chicago and Columbus with the Defense Clothing and Textile Supply Center in Philadelphia. DPSC is the important link between the American Fighting Man and the American food, clothing, textile and medical industries.

Since its inception the volume of work at DPSC has increased over 100 per cent with only a 12 per cent increase in personnel. Had this consolidation not been made, at least 400 more personnel would have been required. In addition, leased space requirements have been substantially reduced and significant data processing and accounting economies have been effected.

The impact of the additional workload can be illustrated by the increase in procurement. In fiscal year 1966 procurements totaled $2.64 billion, more than twice the $1.27 billion worth of supplies bought the previous year. The largest increase involved the procurement of clothing, textile and related items, which more than tripled to a total of $1.176 billion.

New Items Prove Out

A major factor in this increase was the success of new items in Vietnam. The lightweight combat uniform and the direct molded sole tropical combat boot, for example, were originally intended only for the Army's Special Forces units. Since their characteristics were particularly well suited to Vietnam and the addition of steel inserts in the boots protects against poisonous spikes planted by the enemy, they are now being furnished for all of our combat forces there. During FY 1966 DPSC awarded contracts for more than five million of these uniforms and shipped 1.8 million pairs of boots to Southeast Asia during calendar year 1966.

Quick Logistics Action

The Center's buying of medical supplies nearly doubled in its first year, rising to $230.1 million. Approximately 5,000 medical orders are received each day, the majority of which are transceived and introduced directly into the automatic data processing system. Materiel release documents are generally prepared and transceived to the depots within 24 hours. About 20 percent of the orders are transceived to the depots within four to eight hours based on priority indicators assigned by the customers. The speed of the computer is best illustrated by the time it takes to process a single order. This includes validating the order, selecting the depot closest to the customer, rounding-off quantity to unit pack, recording demand by depot, preparing materiel release documents and updating the customers' order file and national inventory record. Total time—five seconds—the time it takes to wink your eye five times.

High stock availability of medical supplies requisitioned has been maintained—a factor in the Vietnam operation which has contributed to the significant drop in mortality rates from wounds. In August 1966 President Johnson stated that U.S. military men in South Vietnam are backed up by the most effective medical and materiel support in the history of our country.

DPSC's food buying also went into high gear as a result of Vietnam, with an increase to $1.235 billion.

Major James Clark of the 3rd Marine Division in Vietnam, points to the helmet which probably saved his life. The major was hit by a 57mm recoilless rifle fragment in the Chu Lai sector. The helmet was procured for the Marine Corps by the Defense Personnel Support Center.

Troopers of the 1st Cavalry are served a hot meal in the field. All subsistence items for the Armed Forces are procured by the Defense Personnel Support Center.

Medics of an Army paratroop element provide medication to Vietnamese villagers near the fighting zone. Medical supplies are procured for the Armed Forces by the Defense Personnel Support Center, a part of the Defense Supply Agency.

This enabled the center to provide enough food to serve 1.5 billion meals for a year in 5,300 dining halls in the United States, afloat and overseas.

To save time in filling orders DPSC had manufacturers ship finished products directly to military customers instead of supply depots. Many of these direct shipments produced significant savings in reduced handling costs.

Standards Ease Supply Chore

In many cases cost reductions achieved in prior years by DSA and the Military Services helped ease DPSC's early period of existence. Because the Services had previously standardized many clothing and footwear items, the Center found the task of buying these items much simpler.

An interesting example: at one time tee shirts (of which there are eight sizes) were required in packs of 60, 70, 360 and 500 according to the individual service requirements. In addition, three methods of pack were specified. Re-examination of item packaging history as well as distribution and requisitioning practices by size of item resulted in a standard pack quantity. A standard container material, size and style were adopted.

Similarly the Services had previously agreed to permit machine sewing to replace certain hand sewing operations on dress uniform coats. The initial savings from this have been dwarfed by the savings achieved in buying huge quantities of these coats during the past fiscal year.

Despite the doubled workload and the necessary adjustments involved in the establishment of the consolidated center in Philadelphia, DPSC has been able to meet its heavy demands and do its part in keeping the American soldier the best fed, best clothed and best supplied fighting man the world has ever seen. ☐

VE In-House Conference Planning Board Meets

The DoD In-House Value Engineering Conference Boards meets for the first time to plan the forthcoming 1967 VE Conference on September 12, 13 and 14 in Washington, D.C. Seated left to right: Mr. Rudy Kempter, OASD(I&L)VE; Colonel George D. Mobbs, OASD(I&L)VE Director; Deputy Assistant Secretary George E. Fouch; Mr. Paul Dobrow, Army Headquarters. Standing left to right: Mr. Alan Schweber, Marine Corps Headquarters; Mr. Bernard Hewitt, Navy CNM; Mr. Leif Watne, DSA Headquarters and Mr. Frank King, Air Force Systems Command. Program, contract, logistic support and value engineering managers will participate in the three-day conference.

By COLONEL D. L. SANXTER

Air Force Plant Representative
Martin Marietta Corporation
Denver Division—Denver, Colorado

Photo shows the author (at left) going over cost reduction results with Don S. Burrows (right), Denver Division Executive Director for Management Operations; Bill Cash (standing left), AFPRO Value Engineering Monitor; and Bill Thornton (standing right), Cost Reduction Manager for Martin Marietta Corporation, Denver Division.

"SOFTWARE" STUDY PANELS UNCOVER ADDITIONAL SAVINGS

Paperwork Keyed to Program Maturity

One of the constants in any good cost reduction program, and particularly the DoD program, is the need for continued excellence in the search. The histories of such programs are replete with evidence that the real contributions are the result of outstanding efforts by alert, motivated people. This is especially true when the area has been well explored previously. Within the systems procurement area, it is not extremely difficult to produce a good cost savings performance during the early phases of a program. But as the program matures, opportunities for savings related to hardware diminish simply because the initiation costs exceed the unit recurring savings. This should not be cause for reduction in activity, however.

Another potentially large area of savings—software—is ready-made for reductions. Why? During program development, the need for detailed continuous knowledge of program progress, cost obligations and problem identification exists within the contractor and procuring agency organizations. Accordingly, data needs are provided by frequent and often voluminous reporting systems. When maturity is reached and the program becomes more of a routine operation, the need for data and close control is reduced. Usually the reports and paperwork continue to flow uninterrupted, regardless of the change in the need or use made of them.

Joint Panels Examine Interface

Mr. William Cash, Value Engineering Monitor of the Air Force Plant Representative's Office (AFPRO), and Mr. William Thornton, Cost Reduction Manager for Martin Marietta, recognized the potential that exists in these maturing programs and developed an idea to effect greater cost reductions. It was their proposal, approved by both AFPRO and Martin Marietta senior management, to organize joint Air Force/Contractor Cost Reduction panels for the purpose of identifying items existing in the software interface area which could be eliminated or changed and thereby result in savings.

This experimental cost reduction study panel effort involved eight two-hour sessions over a three-week period. Actually, there were three separate panels organized to investigate each of three areas—quality, contracts and engineering.

The results of this experiment, involving the cooperative efforts of the contractor and the customer (Air Force), were quite significant.

Huge Savings Potential

Actual cost reductions uncovered by the three panels, which could be automatically implemented, realized a total savings of $9,782. However, in terms of potential savings requiring either further study or contractual implementation before the cost reduction credit can be claimed, the panels uncovered areas that should produce savings amounting to over three-quarters of a million dollars.

One of the objectives of this pilot study effort was to determine if a joint cost reduction study panel could be effective. Without exception, participants and observers alike agreed that the effort was valuable and that similar efforts should be conducted periodically.

This program is believed to be the first of its type, formally using both the customer and contractor personnel in the systematic exploration of cost reduction ideas in the "software" interface between organizations. As a result, a new and profitable area of cost reduction has been opened. Certainly extensions of this concept could be applied to associate contractor interfaces and intra-services.

Special Look Superior to Routine Interchange

It is interesting that from this experience we learned that normal day-to-day relationships do not present the conditions required to promote the kind of interchange of ideas regarding areas that are hard to assess under normal circumstances.

Thus, in addition to the cost reduction savings and ideas uncovered, the mutual endeavor contributed to better understanding and communication of the needs in the contractor/customer interfaces.

In addition, to complete management support from the company and the AFPRO, much of the success for the joint cost reduction study panel can be credited to the criteria established for selecting panel members. First, it was decided that each panel would have six members consisting of four contractor and two AFPRO representatives. In addition, a member of the Denver Division Value Engineering Section served with each panel as recording secretary, to provide guidance from the value engineering standpoint and to provide an interchange between panels.

Another consideration in selecting panel members was that a professional atmosphere must prevail and parochial consideration must be avoided. To achieve this, the following criteria were set up for selecting members.

1. Good overall understanding of the organization function and operation.
2. Thorough understanding of organizational interface within the company and between the company and AFPRO.
3. Familiarity with contractual and program requirements.
4. Managerial experience.
5. Previous experience with AFPRO/customer interface.
6. A positive attitude towards operation improvement and cost reduction.
7. A capability for implementing cost reduction actions, or having sufficient management support to implement major actions.

Panels Develop Search List

Each of the three panels had six two-hour meetings over a three week period plus two review sessions. Prior to the first formal meeting, it was desirable for the panel members to develop a preliminary list of those "software" interface areas from which study actions could be initiated.

At the first meeting of each panel a chairman was elected. The submitted ideas showing the most promise for cost reduction were assigned priorities for discussion and further study. A limited amount of fact finding was required between panel sessions.

In the interest of time, extensive and detailed efforts were avoided and for those projects requiring considerable time and effort, only a description of the system and proposed changes plus the estimated cost reduction potential was submitted by the panels. At the conclusion of the study panel program, these were provided to the departments involved for further study and investigation to determine if the potential savings were valid.

As expected at the outset of the panel study effort, there were a few relatively simple cost reduction actions that could be implemented almost immediately by local management decisions.

Also, it was expected that there would be areas uncovered where savings of significant magnitude could be achieved, but further study and implementation would depend upon a management decision based upon the payoff potential in savings.

A third area of potential savings involved those areas where a management decision was required, but could not be made during the time period established for the organized study effort. These items were scheduled for a later decision and a date established for the decision to be made for either a "go" or a "no go" action.

In submitting ideas for possible savings, each panel member took three points under consideration: the rough magnitude of cost and/or time involved in the current system; an identification of the problems involved in making a change in a system; and the chance of success of the idea being implemented to achieve a cost reduction.

As an experiment, the Joint Air Force/Contractor Cost Reduction Study Panel exercise did show that significant cost reduction savings can be achieved through a detailed analysis of the customer/contractor interface areas.

Some Typical Results

The three panels uncovered 23 separate action items for potential cost reductions amounting to almost three-quarters of a million dollars. An idea of the types of areas explored and discovered to have savings potentials are provided in the following examples:

Elimination of Mod Plates

Elimination of Modification Plates (small metal plates affixed to each modified component indicating its model number) from deliverable end items was proposed because of their redundancy to the History tab run on each end item (a history tab is a machine run citing historical changes in configuration of an item). Both the Modification Plates and the History tabulation carry identical information.

A study of the proposal by the Administration Department revealed that Modification Plates can be eliminated without administrative difficulty. Further investigation revealed that the contract requires removal of the Modification Plates at the time of First Article Configuration Inspection (FACI), thus raising the question as to what purpose they had served up to this point.

This item was priced and included in the T–III–M proposal, as the Design and Build Operations Directive reflected all end items.

The total calculated savings does not reflect the cost associated with writing and coding purchase orders, shipping and receiving costs, or stocking and control of the Modification Plates.

The resulting cost reduction report was submitted in October 1966 for a total of $6,302 in savings.

Ground Support Equipment Transfer

GSE and tools are currently transferred from contract to contract, chronologically. Each transfer is initiated by a Martin Marietta Corporation letter to the AFPRO Administrative Contracting Officer (ACO), who expresses concurrence by return letter. Final documentation is accomplished by the Denver Operations Directive. In one year 5,750 GSE items and 8,000 tools are transferred by this means. Administrative costs of $25 per item for a total of $17,200 per year can be saved by the use of a single traveler form to record all approvals and authorized transfers. The possibility of adopting such a form has been agreed to by both the Martin Marietta Contracts Office and the Air Force Plant Representative's Office (AFPRO).

An alternate method utilizing a single storage and accountability contract is being studied and, if adopted, savings of approximately $90,000 could result.

Property Management for Low Value Tools

Individual records are now prepared and maintained for each item of special tooling regardless of its value. The use of a consolidated stock record for 1800 low value items could save $2,200 per year considering only custodial effort, and neglecting the costs of initiated record preparation and physical inventory. Martin Marietta Corporation Contracts (Property Management) is preparing a procedure to use consolidated records with no physical inventory, for low value tools.

Panel Technique Could Be VE Approach

As a result of this experimental panel study effort, it was evident that this technique for uncovering cost reduction items in the "software"—paperwork areas—was feasible and productive. It is particularly beneficial where interface between two organizations occurs such as the case of AFPRO-Contractor. Undoubtedly, this offers opportunities for inter, as well as intra, relationships between customer and contractor shops. The panel study technique is now being considered as a Value Engineering approach because of the initial successess of the Cost Reduction Study Panel experiment at Martin Marietta, Denver Division.

PANEL SESSION—The Engineering Study Panel discusses potential "software" savings. From left to right are: R. Austin, Martin Marietta, Denver Division; R. Biddinger, Denver Division; G. Fulton, Denver Division; Major L. Tingle, AFPRO and panel chairman; W. Martynec, Denver Division; R. Hart, Denver Division; and M. Taylor, AFPRO.

ZD AWARDS PROGRAM FOR CONTRACTORS

Army, Navy, Air Force and Defense Supply Agency contractors can obtain Defense Department Awards for sponsoring Zero Defects programs that meet the criteria of the procedures in DoD Instruction 4155.12, DoD Zero Defects Program.

Contractor participation in this Department of Defense program is voluntary. The contractor develops his ZD program parameters, establishes his own goals and methods of measurement, and specifies the time period for achieving goals.

The Zero Defects Award Program is designed to recognize a contractor's participation in the DoD-sponsored ZD program and his ability to meet goals that he himself has set.

These following three types of ZD Awards are available.

The *Participation Award* affords recognition to a prime contractor who voluntarily participates in a ZD-type program. The Participation Award is a joint services and DSA type of award which bears the names and/or seals of the three Military Departments and DSA on the award certificate. Eligibility for receipt of the Participation Award is based on satisfying all of the following criteria:

1. The program must show evidence of active support and participation by management.
2. There must be participation in the program as evidenced by pledge cards or their equivalent by at least 85 percent of the employees in any one plant location.
3. Evidence exists of contractor established performance goals and plotting of progress against these goals on displayed charts. Goals must be related to a specified period of time (e.g., one month, six months, one year), realistically significant, and clearly stated within the ZD program.
4. Contractor performance records covering at least a 90-day sustained period are available.
5. The contractor has procedures for sustaining the Zero Defects program (e.g., employee recognition for superior performance).
6. The ZD program includes an Error Cause Identification and Removal feature with documentation.
7. The contractor has implemented a program of education and encouragement to subcontractors to adopt ZD programs.

The *Achievement Award* may be granted to a prime contractor in recognition of demonstrated achievements or improvements measured against contractor established program goals. Achievement Awards are approved and signed in the name of the individual Military Department (or the Defense Supply Agency) that is the dominant customer of the prime contractor. Eligibility for receipt of the Achievement Award is based on satisfying all of the following criteria:

1. The contractor has received the Participation Award.
2. The contractor performance records covering at least a six month sustained period clearly show evidence of progress and achievements as measured against established goals.
3. Goals relate to historical data which reflect performance levels of similar activity for an earlier period of at least six months (e.g., goals can be established for reduction of scrap and rework costs, reduction of product tooling or engineering defects, improved compliance with preservation, packaging and transportation requirements).
4. All established goals have been met during the specified period of time.

The *Craftsmanship Award* may be granted to a prime contractor in recognition of sustained excellence of performance and outstanding improvements. Craftsmanship Awards are approved and signed in the name of the individual Military Department (or the Defense Supply Agency) that is the dominant customer of the prime contractor. Eligibility for receipt of the Craftsmanship Award is based on satisfying all of the following criteria:

1. The contractor has received the Achievement Award.
2. The contractor must have ZD program participation, as evidenced by pledge cards or their equivalent, by a minimum of 90 percent of the employees in any one plant location.
3. The contractor must have exhibited sustained performance at the Achievement Award level or better for one year after date of the award. (Final date specified on the citation accompanying the Achievement Award is considered the date of the award.) □

FIVE CITED BY ENGINEERS

The Chief of Engineers recently awarded commendation certificates to five Civil Works personnel from the Little Rock Engineer District in recognition of their accomplishments in spearheading cost reduction actions that saved more than $2 million.

The largest single cost reduction action, which produced savings of $1 million, resulted from special engineering studies which led to the elimination of one of the locks and dams in the Arkansas River program. John Matsek, Chief of Operations Division, was cited for this action.

Homer A. Robjohn, Chief of Foundation and Materials Branch, was recognized for participation in several savings actions including a major action that saved $176,000 by making special tests proving that shorter steel pilings could be used for certain of the locks and dams under construction.

William K. Finefield, Chief of Real Estate Division, saved more than $500,000 by obtaining right-of-way permits from property owners for the Arkansas River project rather than buying the needed property as was formerly the practice.

Frank A. Burkalter, supervisory structural engineer with the Structural Section, conducted and supervised studies which saved $275,000 by eliminating a river flow draining wall and replacing an embankment with a short concrete overfill.

Austin Buercklin, Chief of Survey Branch, saved $134,000 by recommending use of a new machine to produce contour maps in lieu of extensive and costly field surveys to obtain required data.

The photo below shows recipients of the commendation certificates. From left are Homer A. Robjohn, Frank A. Burkalter, John Matsek and William K. Finefield. Austin Buercklin, not present, was also commended.

Mr. K. M. Deasey (left), a design engineer at General Dynamics-Pomona, discusses his award-winning suggestion for splicing broken wires on electronic assemblies, with Mr. W. J. Morrow, Vice President, Research and Engineering. Deasey received a $5,000 cash award for his idea and became the first Pomona division employee ever to receive the maximum cash award.

GENERAL DYNAMICS EMPLOYEE RECEIVES $5,000 AWARD

Mr. K. M. Deasey, a design engineer at the Pomona division of General Dynamics, put the heat on the broken lead wires of certain electronic assemblies and melted away $50,900 worth of potential waste in the first year his cost reduction idea was used.

The Pomona division of General Dynamics operates the Naval Weapons Industrial Reserve Plant at Pomona, California. Deasey noticed that many complete and expensive electronic assemblies were being pulled from the production line and being scrapped for a variety of reasons. The sheathing of wiring, the 3–D welding of leads, and the lack of space for repair in some intricate assemblies contributed to the problem. Conventional repairing required extensive labor and did not assure reliability. Because of this, the Material Review Board at Pomona, or the customer, could not recommend the assemblies for repair.

Deasey suggested use of heat-shrinkable solder sleeve to splice broken wires on assemblies otherwise acceptable. The sleeve consisted of a small solder ring surrounded by a plastic casing. The splice is made by stripping the ends of the two leads, inserting them into the solder ring, and applying very hot air to the ring. This causes the solder to melt and the sleeve to shrink making a joint which is strong, both electrically and mechanically.

Deasey was given the maximum cash award of $5,000, for his suggestion. He is the first Pomona employee to receive the maximum amount.

"NO GOAL—NO ACTION" NO EXCUSE AT ARMY MUNITIONS COMMAND

Mental Strait-Jackets

The Army Munitions Command, Dover, New Jersey, seems to have whipped a problem that has been plaguing cost reduction administrators everywhere. The problem is that positive and direct participation tends to concentrate in a limited number of organizations and individuals. This situation contravenes the basic program tenet that cost reduction is "everybody's business".

The Munitions Command found that too few people were participating in the Program and, at the grass roots level, many of the managers and employees were not being reached. For want of a better word, this alarming tendency was termed "compartmentalization."

The cause of this problem was not particularly hard to detect. For one thing, the basic structure and administrative techniques of the program actually fostered compartmentalization. For example, the Headquarters, U.S. Army Munitions Command goals were assigned by cost reduction area. The reallocation of these goals, and the attendant administrative processes, involved directly only eight of a total of twenty-four major organizational elements. Within these eight elements only thirty individuals out of a total force of over 200 found they were directly concerned. Command-wide the circumstances generally paralleled the headquarters pattern. A scant 15 percent of the total command organizational elements were active participants in the administration of the program and the actual attainment of goals. The fact emerged with startling clarity that most of the managers and employees at directorate, office, division, branch and section level throughout the U.S. Army Munitions Command were more or less unconcerned, or unchallenged by the cost reduction program.

Shallow Depth

The upper levels of management, stimulated by top-level interest and bolstered by cost reduction program administrators, were the most active group. They called for reports and sought out the specialists who had the greatest potential for reporting the big savings that would meet goals. With very substantial dollar goals in the area of eliminating goldplating, the philosophy and discipline of value engineering, for example, quickly gravitated to the product and process engineering groups. Large dollar savings were available here. Unfortunately, other managers were not exploring the application of value engineering to their own operations. Likewise, utilization of excess property actions centered in the inventory control point. Transportation and traffic management became the sole province of the traffic manager. While effective in meeting goals, this approach to cost reduction did not add up to a flourishing program of widespread participation by all personnel of the command. The upshot of the existing method was the creation of a team of highly developed cost reduction specialists, aggressively pursuing savings but only in their assigned areas of specialization. What was needed was something to dissolve the barriers of isolated compartmentalization.

Two Steps to Improvement

The Munitions Command attacked the problem by using two basic program management techniques: the decentralization of goals, and the integration of cost reduction into the existing management system of the command. Routine motivational aids, such as awards, recognition of outstanding contributors, training and general publicity were used as well.

Experience had indicated that where no goal was assigned, little action could be anticipated. The initial

BATS 1000 AT USAMC—Mr. Donald S. Logan, Chief, Evaluation and Control Division, U.S. Army Munitions Command, shows Major General F. A. Hansen how his new goal-setting technique boosted the number of cost reduction actions reported in FY 1966 more than 1000 percent over the FY 1963 level. The Command's subordinate activities are the Ammunition Procurement and Supply Agency; Edgewood, Frankford, Pine Bluff, Rocky Mountain and Picatinny Arsenals; Fort Detrick, and 25 Government-Owned-Contractor-Operated (GOCO) ammunition plants.

step, then, would have to be one that would counteract the "no goal, no action" predicament. Accordingly, in June 1965 goals were fully decentralized and distributed to individual organizations throughout the command. Whereas, goals were formerly assigned to a few components, by cost reduction areas, lump-sum goals, without regard to areas, were given to nearly all elements. To be sure, a limited number of the goals still retained their area identity and were assigned according to the traditional practices; but the overwhelming majority of the goals were apportioned to organizations *without regard to area identification.* In other words, savings in any cost reduction area, on as wide-spread basis as possible, was the new way of life.

Determining the size of a goal underwent some change. The practice in the past had been to allot an entire area goal to the organization most closely related to the cost reduction area. Now several factors such as size of the organization, personnel budget, span of control, and nature of the mission had to be considered. But these were minor obstacles and were quickly surmounted.

It was soon clear that the broader the goal base, the broader the participation. Managers on the line, with an organizational goal to attain, rapidly stimulated grass roots personnel to produce savings. A large number of managers who were previously concerned with one or two cost reduction areas, or perhaps none, now were encouraged and required to use the concepts and guidance of all areas. The aim was to dig out as much savings as possible in their operations and to report these savings against their lump-sum goals.

A Measure of Success

One indicator of the success of this policy is reflected in the number of validated cost reduction actions produced by the U.S. Army Munitions Command. In fiscal year 1966 the number of actions more than doubled over the previous fiscal year. Some 3,000 actions, or 89 percent of the total number in fiscal year 1966, were under $25,000 in value. Managers and employees at operational level were responsible for most of these actions. Cost Reduction was at last really becoming everybody's business.

To insure continued success, the attack on inadequate involvement was approached from still another direction. This second step stemmed from a fundamental decision that cost reduction would not be grafted on to the basic command management system as just another program. Cost reduction had to become an integrated and sustained element of the principal corporate control system of the command.

Five Year Base Program Is Catalyst

The Command's Five Year Base Program provided an existing vehicle to carry out this decision. Managers throughout the command continuously use this program as a communicating apparatus. Functional, commodity and top management policies, objectives and guidance are disseminated. The cost reduction goals are placed in the basic document of the Five Year Base Program. Each principal command manager's policy, guidance and objectives for cost reduction are contained in a series of functional and commodity annexes and separate schedules. Thus, management's thinking is drawn into the long-term as well as short-term economy objectives of the command. Moreover, since the Five Year Base Program contains a consolidated statement of total command resource requirements, including those of customers, it provides a good initial check-point for an assessment of cost reduction potential. Another important factor should be highlighted. The disciplines of the cost reduction program are brought into the decisionmaking process quite early, and not after the fact. This is a significant consideration in transforming cost awareness from an attitude of "finding waste" to one of "preventing waste."

Sustaining day-to-day participation in cost reduction is certainly not a one-shot matter. Close and constant evaluation of the quality of actions, as well as performance, is required. Program performance cannot be judged solely on the basis of goal accomplishment. Qualitative analysis of managerial input is actually facilitated when cost reduction is built into major plans and programs. The new revisions to the cost reduction system will probably require increased ingenuity and leadership to maximize savings. Transmitting these increased demands will be a basic objective of the Five Year Base Program. ☐

CITED FOR ADMINISTRATION

Rear Admiral (Select) J. L. Howard congratulates Mr. Charles K. Hall and Mrs. Betty Lou Sloper of the Navy Cost Reduction Office on the occasion of their second award for outstanding administration.

SSgt Lowell D. Grace hands overseas flight reservations to Mrs. Roy D. Snowden and her children, Donna—8 years, Corbin—3 years, and Tracey—6 months. Mrs. Snowden is enroute to join her husband TSgt Snowden at Bitburg, Germany. Her family was among the nearly 3000 error-free port calls processed by the Passenger Section Maxwell AFB, in six months time.

GUARANTEED RESERVATIONS

Errors can be embarrassing to those responsible as well as inconvenient and irritating to others. Equally important, most errors cost money. The Zero Defects Program (ZD) seeks to avoid waste of taxpayers' dollars by eliminating or avoiding costly errors. The ZD motto is: *Do the job right the first time.*

The Passenger Section of Maxwell AFB's 3800th Transportation Squadron takes the motto literally. A mistake or mix-up in scheduling a family for transportation overseas could cause unnecessary expense to both the Air Force and the family concerned, not to mention the trial of family tempers.

The situation at Maxwell is well in hand, however. In the first six months of FY 1967, the Passenger Section processed nearly 3,000 port call reservations, at the rate of 20 individuals per day, without a single "goof". Captain Robert L. Murray, Transportation Chief, credits the Section's success to "careful attention to detail by an alert staff" consisting of SSgts William T. Ziegler and Lowell D. Graci; Airmen First Class Barbara Lackovic and Emilio Terevino, Jr.; Mrs. Gavnell Brunson and Mrs. Jerry Willis.

MAGNETRONS ATTRACT PACKAGING ATTENTION

Magnets in magnetron tubes can create stray magnetic fields strong enough to throw aircraft compasses out of whack. That is why several layers of soft iron sheeting were used to shield the tubes during air shipment. Then along came Edward Schoen of the Directorate of Depot Operations at the Defense Electronics Supply Center. He found a better way to harness these stray magnetic fields and to also reduce packaging and shipping costs in the process.

His method consists of positioning two identical magnetrons in their original container so as to neutralize or reduce the stray magnetic field to a safe level. In effect, each magnetron serves as a "keeper" for the other.

Savings realized during a 75-day test period amounted to $2,808.43. When approved as standard procedure the savings are estimated to reach $12,000, annually.

The photo at right shows a single magnetron tube in bulky package being covered with several layers of special soft iron sheeting necessary to meet air shipment requirements. Two magnetron tubes are shown at left in light packages matched for air shipment. Each tube's magnets neutralize the other's stray magnetic fields, thereby cutting packaging and transportation costs.

BENT WRENCHES STRAIGHTEN OUT REPAIR PROBLEMS

Several wrenches used in the Maintenance Division, Fort Irwin, California look like debris from a bad explosion or the aftermath of a mashing by M–60 Tanks.

Actually, the curiously bent and twisted wrenches are the inventions of the Maintenance Division's Walter Johnson and Paul Thompson. These men designed unique angles in the wrenches to permit them to get into places previously inaccessible.

The mechanics now can disassemble one or all of the cylinders of tank engines without first removing several other parts. Use of standard wrenches would have caused removal of the entire upper assembly of the M–48 and M–60 Tank engines before repair work could have been started on any of the cylinders.

Says Shop Foreman Joe Medina: "These wrenches save about 37 labor hours on each engine requiring cylinder work. With an average of 7 engines a week coming into the shop we expect to realize savings of approximately $9,350 a year. Also, we get the tanks back into the hands of the troops much sooner than before."

Johnson and Thompson will split $470 for their idea. Fort Irwin is forwarding the suggestion to higher headquarters for possible adoption by other maintenance activities throughout the Army.

Walter Johnson (kneeling), and Paul Thompson (left), show Shop Foreman Joe Media their newly invented wrenches that save 37 hours labor on each engine and about $9,350 annually. The wrenches were designed to remove cylinders on M–60 and M–48 tank engines. The men, who work at the Maintenance Division at Ft. Irwin, will split $470 for their idea.

The photo above shows James E. McPike receiving a $1500 award from his Commanding Officer, Rear Admiral Frederic W. Corle, in the presence of Captain J. G. Schoggen, director of the Center's Ammunition Division.

IDEAS INCREASE INCOME $520 MONTHLY

How would you like to increase your average monthly income by more than $520? Navy employee James E. McPike did just that during the period September 1966–January 1967 by turning some of his hot savings ideas into cold cash.

McPike, an industrial specialist in the Ammunition Division at the Ships Parts Control Center, Mechanicsburg, Pennsylvania started with an award of $1,100 in September for a suggestion that saved the Navy $91,060.

He topped this in January with a cash award of $1,500 for an idea which not only helped the Navy over a temporary supply problem, but will continue to save the government an estimated $2,882,300 annually. This award was based on his suggestion for a new projectile configuration. The Navy's five-inch projectile used for bombardment purposes was in critically short supply. With a little investigation of the problem on his own, McPike discovered that by replacing the standard fuze of an anti-aircraft projectile with a different fuze the round could be adapted to fill the bombardment role. His idea was adopted and the projectiles were modified and delivered in time to meet urgent Fleet requirements.

McPike's peak has not yet been reached, however. The sizeable savings from future application of his idea prompted Rear Admiral Frederic W. Corle, CO of the Center, to forward the suggestion to the Naval Supply Systems Command, Washington, D.C. for consideration of an additional award.

Meanwhile, McPike is putting his increased wealth to good use in helping to finance his children's education.

COOL CASE OF THE WINKING BLINKING HUTS

"Maybe that's why they call it Camp Friendship".

The above cartoon is not as far fetched as it may seem. There is a Camp Friendship where huts have "eyelashes" that slip unwary observers sultry winks at unexpected moments.

Camp Friendship, located northeast of Bangkok, Thailand, is home for a small contingent of the Ninth Logistics Command whose permanent station is Okinawa. The camp is a rather primitive outpost far removed from the advantages of air conditioning and other comforts of the modern world. In that steamy tropical climate every flutter of breeze is joyfully welcomed and carefully husbanded. Flimsy-looking huts with as much space open to the weather as possible answer this need for maximum ventilation.

There is one drawback, however. Driving monsoon rains, which come frequently and without warning, find the same open areas.

"Eyelashes" attached to each opening can be closed quickly to shut out the weather. They are made of long strands of tropical grass thatching and are constructed by local natives at $1.40 per "lash."

There is one problem, though. Like everything else organic, they deteriorate rapidly in the tropical climate and must be replaced every few months. Recurring replacements give the natives a steady income but also run up the housekeeping bills.

Major Kirk Ehlers of the 528th Engineer Detachment who has been sort of senior "cosmetologist" in charge of eyelash replacement figured there must be something more durable and less costly than the gadgets used. Ehlers experimented with several ideas before hitting on one that turned the trick. He found that corrugated sheet metal, although not any cheaper initially, worked just as well and lasted three times as long as the thatching. So far he has identified savings of $4,500 and expects the annual rate to be around $6,000.

While there is small concern that this swinging mod look will ever set a style trend, one Pentagon wit did observe that the possibility fairly makes him "shutter"

SANGUINARY SERGEANT SYNTHESIZES SERUM

SSG Clyde Marstellar, Brooke Army Medical Center, Fort Sam Houston, Texas, found it is easier to get blood from the proverbial turnip than from a purchasing officer at $80.00 per liter for classroom purposes.

The situation that raised SSG Marstellar's pressure was the substantial increase in serum requirements needed for clinical chemistry classes held at the Center.

Prior to 1965, when relatively few students were being trained, blood serum for the students was easily obtained from cooperating hospitals. However, the increased student load in FY 1965 and further increases slated for FY 1966 made it obvious that the old sources could not be counted on to meet all classroom needs.

Convinced that no blood would be forthcoming from heartless purchasing officers at the going prices, SSG Marstellar set out to obtain "a reasonable facsimile thereof" from the test tube. The synthetic serum that he cooked up is now outdoing natural serum in meeting classroom demands.

Starting from the premise that "blood is thicker than water," he tried several thickening agents in distilled water until he found that egg whites gave the desired consistency. By adding a solution called Difco "Bacto-Peptone" (a non-standard item, catalog number 0–118–02) he obtained an artificial serum with the same color and viscosity of the real thing. In addition, his mixture behaved just like Mother Nature's own during the deproteinization procedures employed in the classroom. He also found that the manufactured serum was more versatile in that its biochemical constituents could be isolated in identifiable combinations. Further, they could then be prepared in any desired concentration. Perhaps most important of all, the manufactured product cost only $.08 a liter as compared with a cost of $80.00 per liter for the genuine serum.

The Army reports that the Center has realized a saving of $16,200 thus far from use of the ersatz serum. A postscript to the report adds that under no circumstances should the savings be considered "blood money".

CASHIERED CONTAINERS CONVERT TO CULVERTS

No money goes down the drain at Fort Kobbs, Canal Zone where the 193rd Infantry Brigade will save the Army over a thousand dollars this year by making road culverts out of old, beat-up bomb and engine containers.

The culverts were needed at the Rio Hato Training Reservation, approximately seventy-five miles from the Canal Zone, where sparsely vegetated terrain and frequent torrential rainstorms cause drainage problems.

Since 40-inch concrete culverts were expensive ($70.00 ea.) and hard to transport, Captain Charles A. Carlton, Assistant Brigade S–4, sought a substitute. When nothing suitable turned up in Army salvage yards, he prospected other service activities in the area. He hit pay-dirt at the nearby Air Force facility where he found 15 bomb and engine containers that were damaged beyond repair. The containers were 10 feet in length and exactly met the 40-inch diameter requirements for the needed culverts.

The 15 "cashiered" containers were obtained without cost and, when installed in lieu of concrete culverts, should funnel approximately $1,050 into Army's savings coffers.

Photos below show at left $70 concrete culverts which were not required because alert Army Captain Carlton found that available Air Force damaged-beyond-repair bomb and engine containers (photo at right) could do the job just as well at no cost.

Value Engineering Pamphlet Released

Right to Left: Deputy Assistant Secretary George E. Fouch, Mr. Rudy Kempter, DoD Value Engineer, and Colonel George D. Mobbs, DoD Director of Value Engineering, discuss the recently released DoD pamphlet, "Reduce Costs and Improve Equipment through Value Engineering." The pamphlet is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. at 50¢ per copy.

Eliminates Duplication

Miss Sharon A. Deforest a clerk-typist in the Defense Communications Agency, Arlington, Va. is shown as she received a cash award from Major General John B. Bestic, Deputy Director, DCA, for her idea which led to elimination of duplicate records in setting up locator cards for personnel newly assigned to the agency.

PRIORITY DISTRIBUTION SYSTEM IN SUPPORT OF F/RF 4C AIRCRAFT

New System Quickens Supply Support—Computer Aids Logistics Speedup

15,000 Monthly Supply Requests for F4 Fleet

F/RF 4C tactical and reconnaissance fighter aircraft are setting an impressive combat record in Southeast Asia (SEA). F4C pilots have been responsible for 75% of the MIG "kills" to date. Action like this requires good, timely, efficient logistics support—and it is up to the Air Force Logistics Command (AFLC) to furnish it.

Ogden Air Materiel Area, Hill Air Force Base, Utah, has systems management responsibility for the F/RF 4C. OOAMA, as it is called, is commanded by Major General T. Alan Bennett and is supported, in turn, by all other AFLC activities. Approximately 15,000 requests per month arrive from the Pacific Area (PACAF) for supplies to maintain the F4 Fleet. A large percentage of these requisitions are urgent in nature, requiring immediate responsiveness in order to maintain a high operationally ready combat posture.

Recognizing the criticality of this requirement, Gen Kenneth B. Hobson, AFLC Commander, directed that the F/RF4C support system be updated with the most modern techniques and facilities in order to guarantee maximum responsiveness. Requests are transmitted from SEA directly to a control center at Ogden where processing four times daily is currently accomplished on an IBM 7080 computer. To speed the process further, Gen Hobson has approved a system that became effective 1 February 1967 known as Priority Distribution System PDS F/RF4C. The heart of this operation is the expansion of an RCA D301R random access computer system at OOAMA to permit immediate response as requests are received.

New System Improves Logistics, Cuts Costs

Representing the latest word in mechanized processing, the following benefits become standard products of the improved support system:

- The closest storage site is notified electronically to accomplish immediate and direct shipment to the customer.
- Items not on hand are back-ordered and the item manager is provided with complete information to permit expediting action. When appropriate, contractor is notified to accomplish priority shipment directly from factory to the overseas customer.
- Erroneous requisitions are rejected with immediate and complete information to permit prompt corrective action by the depot item manager.
- In every case, the requisitioning activity is promptly provided with status information on each item in time to permit use of this data in mission scheduling.

In order to meet these rather ambitious objectives, an additional data disc and two magnetic tape units have been added to OOAMA's RCA D301R computer. The completed assembly is one of the newest developments in the art of data processing. As an aside to the support problem, these changes have actually reduced total costs by releasing 100 hours of IBM 7080 time every month. This machine time will be used to satisfy other urgent requirements in support of SEA. AFLC has long been a leader in supporting the DoD Cost Reduction Program; these changes in the F/RF4C support represent an ideal example of savings generated at the same time that improved support is provided to a customer.

Eight Billion Dollar Operation

Although the command is in the process of phasing out several major installations, responsive logistic support to Air Force systems world-wide will continue to be provided. At present, the authorized command strength is 141,000 military and civilian personnel located primarily at five AMAs. Despite reductions, AFLC is by no means a small operation: total funds managed within the command exceed eight billion dollars per year. AMAs and supporting contractors modify or repair 11,000 aircraft per year. Twelve thousand aircraft engines are overhauled in a similar period. Components and accessory items repaired in a year's time exceed 1.5 million units.

In 1950, the AFLC inventory contained 650,000 stock items. Late in 1961, this number exceeded two million. Rapid growth during the 1950's was caused by the complexity of new weapons and by technological advances such as those which occurred in the electronics field. Critical examination of each line item coupled with maximum consolidation and elimination has reduced the total to 1.7 million items in the current Air Force inventory. Of these, AFLC has completed management responsibility for slightly more than one million. The majority of the remaining items are common to the services and are managed by the Defense Supply Agency or General Services Administration. The value of centrally-procured Air Force spares, including spare engines, has been cut from $19.6 billion in 1950 to the present figure of $9.6 billion. This large inventory reduction has been accomplished by improving the tools of military logistics. These advances have permitted a radical cut in the stock levels at Air Force bases for those items received from depots. They have also permitted the adaptation of the direct support concept in supplying the overseas bases from the Continental U.S.

Brigadier General Morris (right) AFLC Comptroller, is also manager of the Command's Cost Reduction Program. In this recent picture, Brigadier General Morris receives the Air Force Cost Reduction Plaque from General Hobson, AFLC Commander. The award had previously been presented by Air Force Under Secretary Paul in recognition of savings achieved from operation of the improved Priority Distribution System and other cost reduction acomplishments at AFLC.

RCA 301 computer with some of the peripheral equipment used in support of PDS–F/RF4C program.

To accomplish this revolution in Air Force logistics during the past decade, major changes have occurred in many different directions. Those having particular impact upon first line aircraft support in Vietnam are computers, communications and transportation.

A 5,000-Man Data Processing Facility

Perhaps more than in any other support area, computers have changed radically in recent years. In the processing of data, AFLC has evolved from a manual system in the 1940's through a mechanized system of punched cards to our present system of large scale computers. Each AMA has two large computers with supporting smaller computers and related peripheral equipment. All functional areas including supply, maintenance, procurement, transportation, civil engineering and finance are supported by these data computers. Unusual requirements such as PDS–F/RF4C are specially designed and built into the standard system in order to retain maximum uniformity and still adapt to special needs. The Logistics Command currently utilizes about 5,000 military and civilian personnel to manage and operate its data processing facilities. Each AFLC manager relies heavily on computer products in managing the resources of the Air Force. A study is currently underway to define the "third generation"

F4C fighter with rockets loaded in readiness posture at a Vietnam base.

computer requirements of the future to permit even faster logistic response. The system will provide AFLC managers with constant world-wide asset information to assist them in making logistic support decisions.

AUTODIN Switching Centers to Increase

Communications likewise have improved in recent years. In 1966, requisitioning was principally accomplished through a transceiver network consisting of manual relay stations located at each AMA with extending lines to Air Force bases. As emphasis was placed on decreasing the materiel pipeline time, this system soon became outdated. Present support is provided by the Air Force Communication Service (AFCS) operated Automatic Digital Network (AUTODIN). This system is a highly automated communication network. The heart of the system is in eight automatic electronic switching centers (AESC) which use computers to receive, store, identify and route data to its intended destination. All of the AESC's are located in the U.S.; however, action is already underway to install comparable centers in selected overseas locations. AUTODIN has several important characteristics. First, the network can transmit and receive cards, paper tape, or magnetic tape; data can be interchanged among these media. Second, the centers accept the input on a completely automatic basis, store it in memory devices, and then deliver it to the addressee on a priority basis. And last, the system has built-in checks to insure that the original data are not changed during the transmission. To support the future processing posture being planned in AFLC data processing, still further improvement in communication support will likewise be necessary.

Faster, More Versatile Transportation

Another basic tool of logistics is a responsive transportation system which will ship material in keeping with the nature, value and urgency of need. In recent years, there has been a shift in the use of the various modes of transportation to obtain more flexibility and speed. First, there has been a pronounced increase in the use of trucks over railroads. Trucks have been found to be more compatible with AFLC cargo requirements, and their schedules are more frequent. This flexibility provides faster delivery. Second, many small, high priority items can best be handled by parcel post. The third change is an increased use of cargo aircraft. AFLC now utilizes airlift for 49% of all shipments, comprising 25% of the total tonnage moved. Shipments are made both by military aircraft and by commercial carriers under contract to the Air Force. The majority of shipments overseas are by military aircraft. For movement of air cargo within the continental United States, AFLC uses a contract system known as "LOGAIR." Under this system, commercial carriers service all AFLC installations and 70 other Air Force bases on a daily schedule.

Domestic transportation costs have increased 60% between 1954 and 1967. However, this is a case of spending money in one area to gain increased savings in another. Fast transportation has helped to reduce the size of the inventory, the amount of new procurement, and the number of storage sites. Air transportation also allows expedited support to operational units located in remote areas.

The majority of air shipments to overseas bases go through aerial ports of embarkation, such as Travis Air Force Base near San Francisco. To reduce shipment handling and delivery time, AFLC and Military Airlift Command (MAC) have established through plane service from selected stateside points to Vietnam and other destinations in the Far East. For example, this service reduces transit time from San Antonio to Japan by 1½ days for items that previously went via Travis by LOGAIR and MAC. Transit time was reduced by six days for large items which previously covered the Texas-to-California segment by surface means. The mode or combination of modes of transportation is used which will meet the net requirements of timeliness, economy, and high quality of service. The full value of the PDS–F/RF4C could not be realized without equally modern and efficient transportation.

No Limits on Computer-Aided Progress

In view of those achievements summarized above, it is safe to say that the day of electronic warfare is now at hand, particularly in the field of logistic support. Without the complete integration of advanced computers and modern management techniques throughout the entire spectrum, today's streamlined support system would become inoperative. As the availability and suitability of computers improves even further in the future, additional technological advances become feasible. Practically no limit is foreseeable today to the use that management will make of data systems in providing tools for operational control and decision making. ☐

LIKELY CANDIDATE

Officer Candidate Harold L. Hughes, Company D, 1st Battalion, Officer Candidate Brigade, Fort Knox, Kentucky, no doubt has all the qualities essential for a future Commander of Armor.

In addition, he has recently demonstrated that he also has special characteristics of alertness to management improvement opportunities and concern for cost of doing things that mark him as a possible candidate for assignment as a cost reduction administrator.

While with Company A, Special Troops, Fort Polk, Louisiana, Hughes noticed that enlisted reservists were being held over several days after completion of training for release physicals and out-processing. Paper work for releasing the reservists could not be completed until after the physicals. This delay was costly since the reservists were fed, housed and paid for the processing time.

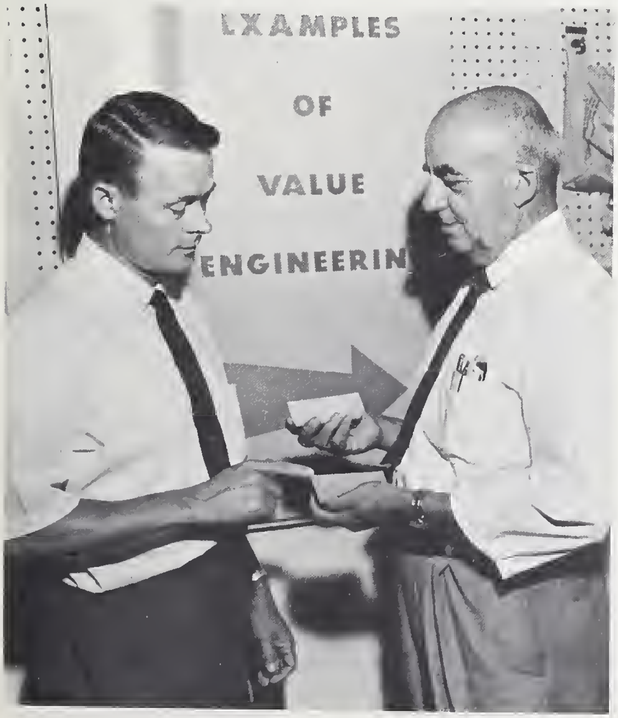
Hughes' system is simply to schedule the enlisted man's release-physical during his last week of training. This eliminates the need to retain the soldier for several days following completion of the training cycle, and permits his out-processing to be scheduled for the day after graduation.

The new streamlined processing procedure improved work scheduling, reduced paper work, and eliminated extra housing, feeding and active duty pay formerly required. Total savings, estimated to be $100,000 annually, justified a cash award of $1,000 to Hughes.

The new system worked so well that on February 17th, Brigadier General Albin F. Irzyk, Assistant Commandant of the U.S. Armor School, supplemented the initial award with an additional $135 and a special Suggestion Award Certificate.

Old Brush Handles Scrubbed

Leon Jones (left) Value Engineering Analyst, and Arthur Hayford, compare two similar medical scrub brushes, at the Defense General Supply Center. Jones is pointing to the new scrub brush with a polypropylene plastic handle which is equal in quality, but cost 14.5 per cent less than the other brush (nylon handle) held by Hayford. The pair conducted a value engineering study which led to the decision to procure the brushes with handles made from polypropylene instead of nylon. Savings of $8,488 have been reported thus far.



DOWNSPOUTS BAR NEUTRONS

The Argonne National Laboratory, a facility of the U.S. Atomic Energy Commission, uses long slim aluminum containers filled with anhydrous borax for neutron shielding at their CP–5 reactor. The lab had been ordering the containers custom-made. Cost conscious employees noticed that the containers closely resembled standard gutter downspouts. A check of the catalogue of one of the leading mail order houses revealed that the downspouts could be purchased in the diameter and length desired. Results? Over $8,000 saved by using aluminum downspouts in lieu of custom-made containers.

The Unsinkable Navy Barge

Shrapnel from gunnery fuze tests on this barge regularly rips through the pontoons without deep-sixing the barge or causing frequent repairs. Reason: astute test managers have filled the pontoons with polyurethane plastic foam to maintain flotation. Lieutenant A. J. Smith, formerly Weapons Evaluation Officer at the Naval Weapons Laboratory in Dahlgren, Virginia, received an $850 award for this saving of $26,750.

REALLOCATES EXCESS CONTRACTOR INVENTORY

Mr. R. J. DeVault of Naval Air Systems Command, and Mrs. B. W. Ronish of the U.S. Navy Plant Representative's Office, Pomona, California, received Certificates of Merit in separate ceremonies for their outstanding contributions to the Navy's Cost Reduction Program. The photo below shows Mr. DeVault as he received his certificate from RADM P. A. Holmberg, Naval Air Systems Command Representative, Pacific. DeVault and Mrs. Ronish collaborated to effect a cost saving of $26 million by identifying and reassigning excess contractor inventory to other government contracts.

The Chief of Naval Material in his letter of transmittal, stated in part: "Through your enthusiastic attention to duty and professionalism, the Navy's goal of $5 million savings in excess contractor inventory was exceeded by $23 million during fiscal year 1966. You are to be commended for your outstanding performance and resourcefulness. Well done."

DOD HELPS FAA ECONOMIZE

The Federal Aviation Agency has joined with DoD in several procurement programs to gain cost advantages from volume buying. Examples: joint fuel procurement saved FAA $781,000; communications lines leased jointly with DoD resulted in lower costs for both and saved FAA $8 million.

BASEBALL ALSO HAS ONE

The Air Force Academy has a Hall of Fame for its outstanding cost reducers. Each selection is approved by the Superintendent. Only nominees who have contributed significant cost reductions reach the Hall's pedestals. Selections are announced at the Academy's annual Cost Reduction Awards Ceremony.

T–O–T–A–L RINGS BELL

In 1966, Bell Aerosystems inaugurated an employee motivation, cost reduction program called "TOTAL"—Team Offense To Achieve Leadership. TOTAL encompasses four separate programs: employee suggestions, performance improvement, value engineering, and zero defects. Bell proudly reports more than 7,000 voluntary participations for 1966.

SIGNS OWN "BENE-SUG" CHECK

Warrant Officer Charles T. Scaringella, the disbursing officer at Fleet Activities, Sasebo, Japan, signed a check for $1,055 which was then presented to him by Captain Ray E. Oliver, Commander Fleet Activities. The check was an award under the Navy's Beneficial Suggestion Program for Warrant Officer Scaringella's recommendation to consolidate Supply training and Officer Candidate training into one school for all Supply Corps warrant officers.

His idea will reduce the curriculum by six weeks, eliminate duplicate courses in Naval orientation, leadership, and administration and do away with courses in operations and navigation. Rear Admiral B. M. Strean, Deputy Chief of Naval Personnel, in his letter of award, stated that Warrant Officer Scaringella's suggestion "contributes in a meaningful way to economy in the Navy's training and education program." He estimated the first year savings to the Navy at $80,410.

Warrant Officer Scaringella reported to Sasebo after graduation from the U.S. Navy Supply Corps School at Athens, Georgia, on November 21, 1966. His suggestion was made while attending Supply School.

Warrant Officer Charles T. Scaringella is presented with a check for $1055 by Captain Oliver, Commanding Officer, Fleet Activities, Sasebo, Japan. The check was awarded under the Navy's Beneficial Suggestion Program.

Continued from page 5 (PPBS)

TABLE 1.—*Rates of return on investment in national forest land timber stand improvement*

Average annual rate of return on investment (percent)	Acres requiring investment (thousands)	Investment cost (millions)
10 or more	132	$6
6–10	4, 423	217
5–6	1, 555	90
4–5	2, 585	148
Less than 4	4, 915	209
Total	13, 610	670

allocation of available treatment funds among these 14 million acres will increase the value of timber growth by over $40 million.

In this analysis, the national forest lands were categorized by region, timber type, and soil quality. Increases in outputs which result from intensified silvicultural treatments of the various categories were estimated. This information was then used to compute a rate of return for each timber type and soil quality class in each region, with the assumption that the prices of primary timber products relative to competing commodities are held constant at current levels. The analysis indicated that about 4½ million of the 14 million relevant acres could yield a return of 6 percent or more on treatment costs (see Table 1). Reallocating the $17 million per year in available treatment funds to the most productive opportunities would increase the present value of timber output from $429,786,000 to $471,615,000 (see Table 2).

Peace Corps Training Programs

The use of program analysis is not limited to optimization in terms of the physical world. It can also be applied successfully to a wide range of programs concerned with helping people or developing human resources. The Peace Corps, for example, has been able to improve its training programs substantially through PPBS.

It is difficult to define the grand design of an educational program, which is often intended to produce a number of people with a range of general and specific, and sometimes amorphous, skills. Nonetheless, it is possible to define specific objectives which are certain to contribute to the overall goal if efficiently fulfilled. The Peace Corps has to train large numbers of people for service overseas. Since the money it can spend on this is limited, it has a strong interest in making certain that this training is as efficient as possible. That is, while the substance of the training program may have to be determined by the non-quantified judgment of experienced personnel as to the general skills which will help to further the goals of the Peace Corps in foreign countries, the manner in which these skills are taught is subject to more precise analysis.

As one element of the problem, training will be most efficient if the class size achieves the optimum balance between the waste and duplication of small groups and the more difficult teaching problems which occur in large ones. Through program analysis of the many factors involved in personnel training, the Peace Corps concluded that the optimum size of a training group for its purposes is 40 to 50 people.

Improvements in the resolution of a more complex Peace Corps training problem were also made through the use of program analysis. In addition to its general training programs, the Corps must recruit and train people with special skills, such as agronomists and technical and vocational teachers. Initially, volunteers with needed skills were acquired by training students in the summer prior to their last year of college, having them go back to college for their senior year, and then giving them more training during the succeeding summer. The attrition rate during the senior year was very high and the expenses of the program per trainee were excessive.

An in-house analysis of the needs of the Peace Corps indicated that training in the particular skills could not be dispensed with. The need was great and was steadily increasing. The analysis then presented feasible alternative training methods which would help to cut the attrition rate in the program. The best alternative was to establish degree programs in universities

TABLE 2.—*Two equal-cost timber treatment programs; current and highest-return alternatives*

Region	Current allocation of treatment funds		High-return allocation of treatment funds	
	Regional distribution	Present value of output	Regional distribution	Present value of output
	Percent	(000)	*Percent*	(000)
Pacific Coast	28	$141, 783	33	$176, 205
Rocky Mountains	26	85, 995	10	36, 175
South	24	108, 948	42	188, 110
North	22	93, 060	15	71, 125
Total	100	429, 786	100	471, 615

whereby Peace Corps volunteers went into the Peace Corps after three years of college and received credit toward graduate and undergraduate degrees for their work overseas with the Corps. In doing this, some training is made a part of undergraduate education and subsidized by the Peace Corps. This subsidization costs money, of course, but the analysis indicated that this is a less costly and more effective way of training skilled personnel than the method used before the analysis.

Other Social and Economic Benefits

These examples show some of the ways which program analysis results in costs savings or increased effectiveness. A few other instances which might be cited are:

- The Department of Health, Education, and Welfare has engaged in comparative analysis of the relative effectiveness per dollar of costs of saving a life under its various safety and disease control programs. The Department is using the results of the analysis in designing its program mix.
- For a number of years the Internal Revenue Service has analyzed and improved the relationship between revenue collections and allocation of enforcement resources.
- Systematic analysis of the logistics of AID programs in Viet Nam will result in substantial increases in effectiveness.
- The Peace Corps' analysis of its training needs has, in addition to the results discussed above, enabled the organization to negotiate training contracts substantially in advance of the time when the facilities are needed instead of immediately before the commencement of the training program. This has resulted in improvements in contracts and in curriculum.
- The Civil Service Commission has managed to cut its unit cost of investigating Government employees by almost 20 percent as a result of analyses of the entire system of investigation.
- Many agencies have made major efforts to rationalize forms and data collection, at substantial savings in time and money to both the Government and to the respondents.

The Future of PPBS

All of the experience of this first year of PPBS indicates that program analysis will be just as successful in the civilian agencies as it has been in DoD, and that the cost savings and program effectiveness will increase greatly as it becomes a familiar working tool in the agencies.

Even in the agencies which have made the most progressive use of PPBS, however, there is still a long way to go. Analysis is the foundation of PPBS, but not the whole of it. The aim of program budgeting is not only to stimulate analysis of government programs but also to ensure that systematic analysis becomes the basis of governmental decisions. The budget requests which come to the Bureau of the Budget and to the President should be requests for support of relatively detailed programs based upon as firm a grasp of objectives as is possible and a rigorous examination of the alternative methods of achieving them.

It is this attempt to create a linkage between comprehensive, thorough analysis and the program decisions actually made by government agencies that is the most distinctive feature of PPBS as a system of governmental management. Once this linkage is accepted as a necessity by the agencies of the Federal Government, the cost savings and effectiveness increases in Federal programs will become dramatic. ☐

THEY TRY HARDER

The Army Missile and Munitions Center and School at Redstone Arsenal, Alabama saved $793,400 out of its operating budget of $15,627,000 in FY 1966. This makes the organization "No. 2" in the savings competition among the eight Army schools in the seven southeastern states making up the Third Army Area.

Col. Erwin Graham, MMCS Commandant, said that the savings were made in small amounts from many improvement actions throughout all operations. He also pointed out that the savings were realized at the time when the yearly training level was rising from 5,000 to 10,000 students.

Allen C. Metzger of the MMCS Comptroller's office administers the Center's cost reduction program. He reported that a large amount of the savings resulted from ideas submitted through the Army Suggestion Awards Program. As an example, he referred to a $31,600 savings from a sergeant's suggestion to equip troop barracks with one double wardrobe locker instead of two smaller ones for each man. The sergeant received a cash award of $800 for his idea.

Another winner found that frequent repairs on radar training devices used in classroom exercises could be reduced substantially by replacing the equipment's two-watt resistors with longer-lasting five-watt resistors. Savings amounted to $2,880 during the year, with the side benefit of increased use-time of the training aids.

notes from the.. director's desk

Readers with a yen for more nuts-and-bolts knowhow in cost reduction management have asked the JOURNAL to regularly feature informal comment on new developments, guidance and instructions. The JOURNAL is happy to oblige. The following notes were provided by Harrell B. Altizer, Director for Cost Reduction Policy, Office of the Assistant Secretary of Defense (Installations and Logistics).

* COST REDUCTION AND RESOURCE MANAGEMENT Resource Management Systems have been defined as those methods and procedures used throughout the DoD that (1) deal with resources, (2) are intended to assist in the management of such resources, and (3) constitute systems. It is generally known that a major effort is now underway to develop and implement integrated planning, programming, budgeting and accounting systems. The portion of this effort expected to be accomplished and effective beginning July 1, 1967, has been designated Project PRIME. One of the major effects of Project PRIME will be to change the accounting structure now used to document and report expenses (costs). Commencing in FY 1968, actual costs incurred for program elements, functional categories and expense elements will be maintained separately.

A question frequently asked is what effect will Resource Management Systems generally, and Project PRIME specifically, have on the Cost Reduction Program? The consensus is that with the improved cost base which will be available when these systems are implemented, the ability to measure the cost impact of a specific management improvement action will be substantially enhanced. Hence, it should become easier to develop the actual or estimated cost effects of management improvement actions which qualify for reporting in the Cost Reduction Program.

* IDENTIFYING NEW, IMPROVED, OR INTENSIFIED MANAGEMENT ACTIONS A key decision in identifying and reporting a cost reduction saving is the determination as to whether the action which resulted in the savings is either new, improved or intensified. This determination is perhaps the most critical single decision involved in reporting the cost effects of an individual cost reduction action; it is also likely to be the most subjective of any decision required. The following interpretations were recently provided to help clarify the intent, in the context of the Cost Reduction Program, of the use of the terms "new, improved or intensified management actions."

A. A new management improvement action is one that has never been applied (implemented) before by the reporting activity. It may have been applied elsewhere in the overall parent organization but must not have been previously applied by the activity or organization reporting the cost reduction.

B. The determination that a cost reduction saving results from an improved management action becomes more complex. Involved, are those actions which have been applied (implemented) previously by the reporting activity but which have been revised, changed, or otherwise improved in the current year so that the current cost reduction impact is greater than the cost impact of the previously implemented action. The difference should normally represent the reportable cost reduction savings.

C. The most complex type of action to identify and apply are intensified management improvement actions. Involved here are situations where previously applied actions or management techniques (implemented prior to the current year) are now being applied to a new or different item, job, operation, function or activity.

1. The most difficult judgment required is the determination that this "new or different" application is in fact "new or different" when individual items or classes of items are involved. The proper distinction here is that when a class of items is involved (electronic, construction, aircraft, etc.) and the action has application to the entire class at the time of initial implementation (first cost impact), the action qualifies for reporting only in that year. This is so even though some of the items in the class will not incur the cost benefits until some later period. When an individual item within a class of items is involved and the action has application only to the individual item in the form of an intensification of an old practice or technique (value engineering, competition, multi-year procurement, etc.) the action qualifies for reporting in the year of first cost impact. This is so even though the practice or technique has been applied in prior years if a special or intensified effort is required to apply the action to a specific individual item.

2. An action will qualify as an intensified management improvement action when costs are reduced by applying a previously implemented management practice or technique to a different job, operation, function or activity for the first time.

∗ DETERMINING REPORTABILITY OF SAVINGS No matter how many rules are written, or how carefully they are developed, they cannot possibly cover every conceivable situation. Many times an administrator will be faced with the decision as to whether or not a proposed cost reduction action fits the criteria of the Program. Too many times the tendency is to toss the action aside and thereby avoid the decision. This attitude not only is unfair to the originator who deserves recognition if his savings idea is sound, it does the Program a disservice as well, and shunts aside ideas which may be used by others.

The proper attitude is to realize that guidance cannot possibly be precise enough to cover each specific action. Where there is reasonable doubt, responsible judgments have to be made. In each case the evaluator should consider that while all non-qualifying ideas should be rejected, each qualifying idea deserves to be recognized. In the analysis of any potential savings action, the final test should be: (1) does it save Defense Department funds, and (2) do the savings result from a new, improved or intensified management action.

✶ CONTRACTOR SAVINGS REPORTABLE IN DOD PROGRAM There are five areas contained in the DoD Cost Reduction Program which include savings also reported by Defense Contractors in the Contractor Cost Reduction Program. These areas are: (1) Value Engineering, (2) Technical Data, (3) Technical Manuals, (4) Excess Contractor Inventory, and (5) Packaging, Preservation and Packing.

Questions have been raised concerning the propriety of including contractor reported savings in the in-house program. There are several reasons for doing this:

- A joint Industry-Government cooperative effort is usually involved in initiating and approving actions which result in savings in these five areas.

- It is frequently difficult to determine whether the action was first suggested or initiated by Industry or Defense personnel.

- Even though most actions in these areas require Defense approval prior to implementation, actual savings do not accrue until the action is implemented by the contractor.

- Where contract incentive arrangements are involved, i.e., value engineering sharing clauses, the savings to Defense and the savings to the contractor do not duplicate, but are, rather, the appropriate share of the total saving allocated to each in accordance with the contractually designated sharing arrangement.

- Finally, total savings reported in the contractor program are never added to total savings reported in the in-house program.

For these reasons, the reporting of the same action in the Contractor Cost Reduction Program in the five areas designated above, and in the DoD Cost Reduction Program is both appropriate and consistent with the scope and coverage of both programs.

It is hastily added, however, that savings actions reported by Defense contractors in other areas of their program should not be included in the in-house program reports since they are usually the result of unilateral actions taken by the contractor.

Continued from page 19 (SYSTEMS)

oriented unit. In the Department of Defense, as in other organizations, the point and time of purchase are not necessarily the point and time of use. Therefore, if resources consumed are to be charged to appropriate user units, a device is necessary which will distinguish between the point and time of purchase and the point and time of use. This device is working capital.

Working capital corresponds to the use in industry of inventory and various asset accounts to hold resources in suspense until they are consumed. Goods and services are not charged to expense, but to non-expense asset accounts when purchased. These are working capital accounts. At the time of use, these items are charged out of working capital accounts to user units, and at that time they become expenses (consumed resources).

Our principal working capital devices are stock funds, which hold material in suspense until consumption; and industrial funds, which hold costs of items manufactured and services provided by DoD components in suspense. These devices permit management to be exercised at the point of consumption, rather than merely at the point of purchase or manufacture, and facilitate the determination of the total resource usage of a unit. The use of both types of working capital funds will be significantly expanded beginning with FY 1968. The extension of working capital, and the corresponding charges to operating managers for items previously considered "free issue," will allow and encourage closer surveillance of the use of these resources by managers.

Expense Account Structure

The fourth major change in our Programming/Budgeting/Accounting system under Project PRIME is the development of a uniform chart of expense accounts. It provides a basis for classifying and charging all of our expenses of doing business. The purposes of the uniform account structure (known as "Expense Data Requirements") are to insure that management reporting information serves the needs of managers, to facilitate comparisons and combinations of all DoD budgets and accounting reports, and to bring budgeting and accounting information in line with the programming part of the system. This change will provide a means of following the costs of programs from the decision stage (programming) through budgeting and accounting in equivalent terms, and of making more accurate estimates of the costs of proposed future programs and activities. This development will allow review of operations to assist in future decisions.

The prescribed expense accounts are at a level of detail required for programming and budgeting by the Office of the Secretary of Defense. Each Military Department and Defense Agency is amplifying the structure to meet its own management needs. The additional accounts, however, must be subsidiary to the uniform expense account structure, or permit aggregation to it without statistical proration. A separate set of expense accounts is to be maintained for each operating budget. Each expense will be identified by program element, functional category, and element of expense (type of resource).

In addition to these, many more changes are being made in our programming, budgeting and accounting procedures, in order to produce an integrated management system. For example, the program element structure has been modified to bring it more in line with organizational entities; budget formats and the treatment of the budget are being modified; policies on establishing prices for sales of goods and services among DoD components have been brought in line with the new concepts; and we have developed standard subsidiary cost accounting systems for certain functional areas. We refer to the total effort as Project PRIME.

Impacts Will Be Gradual

The overall effects of the changes we are making under Project PRIME are twofold: (1) programming, budgeting and accounting data are to be more nearly in phase with each other, thereby facilitating the evaluation of performance against plan in several stages, and (2) responsibility for resources used will be more nearly identified with the individual managers who have the responsibility for accomplishing missions and goals. Each manager will budget for, and accept financial responsibility for, all the resources he uses in doing his job. He will have the kind of information he needs to evaluate his performance against his plans, and to think in terms of alternative uses of resoures in order to do a more efficient job. It is difficult, if not impossible, to predict the specific impact of these changes on the effectiveness and efficiency of the Department of Defense. And, in fact, the impact of our changes will likely be gradual. Our new systems will gradually give visibility to the kinds of resource-use information with which good managers may formulate plans for improving their operations. The flexibility of each manager in selecting among alternative resources to accomplish his mission will be enhanced—again gradually. And our systems themselves will no doubt be modified as time goes on, to reflect changes in our environment and in the ability of our managers to make good use of them—gradually. Finally, it is a truism that good management systems do not guarantee good management. Motivation is still the indispensable ingredient. □

Bibliography for DoD Cost Reduction Journal

(Issues: Spring 1966, Summer 1966, Fall 1966, Winter 1966–67.)

Authors

Altizer, Harrell B. and Edward E. Oppenheim. *The ABC's of Cost Reduction Management.* (Fall 1966, pp. 45–49.)

Discusses the philosophy and objectives of the Program; its organization and mechanism; and pin-points the responsibilities of the cost reduction administrator in implementing and managing an aggressive savings program.

Altman, Irving B. *Zero Defects: A Personnel Program.* (Spring 1966, pp. 24–25.)

Describes the DoD Zero Defects Program, explains how the Program functions, and identifies typical results achieved by contractors and DoD in-house activities.

Baldwin, Robert H. B. *Retention of Navy and Marine Corps Personnel.* (Fall 1966, pp. 15–17, 56.)

The Undersecretary of the Navy gives an overview of the scope, considerations, and findings of the Navy Policy Board and supporting Task Force established to examine in depth the problem of Navy/Marine Corps personnel retention.

Barnet, Edward. *Innovation.* (Winter 1966–67, pp. 33–35.)

An academician treats innovation and cost reduction philosophically, and discusses obsolescence of knowhow acquired at universities.

Besson, Frank S., Jr. *Shipping to Southeast Asia.* (Summer 1966, pp. 21–23, 39.)

The Commanding General, U.S. Army Materiel Command, explains latest improvements in transportation and shipping services and techniques and action being taken to cope with logistics challenges of the future.

Brown, Harold. *Enhancing the Effectiveness of Air Force Tactical Forces.* (Winter 1966, pp. 9–12, 18.)

The Secretary of the Air Force summarizes the improved combat capabilities stemming from the increased attention given Air Force tactical forces in recent years. The article notes two representative opportunities for enhancing further the future effectiveness of tactical air forces.

Enthoven, Alain C. *Systems Analysis.* (Summer 1966, pp. 5–9.)

The Assistant Secretary of Defense for Systems Analysis explains how modern analytical methods are used within DoD to examine a specific objective in its broadest sense, including its reasonableness or appropriateness from a national policy point of view, and how information is developed to assist the responsible decisionmakers in selecting from several possible alternatives the one most desirable from the standpoint of greatest effectiveness for the least cost.

Fouch, George E. *Equipment Maintenance and Cost Reduction.* (Spring 1966, pp. 13–14, 33.)

The Deputy Assistant Secretary of Defense for Equipment Maintenance and Readiness delineates DoD policies in his area and describes cost reduction potential.

Harmon, Billy F. *The Sergeant Looks at Cost Reduction.* (Summer, pp. 33–35.)

The Cost Reduction Program as seen by an Air Force enlisted man. Discusses his experiences as a cost reduction administrator at base and mid-management command levels.

Harrison, Bertram C. *Manpower Management and the Air Force Management Engineering Program.* (Spring 1966, pp. 17–18, 23.)

The USAF Director of Manpower and Organization explains the workings of the Manpower Validation Program, discusses career opportunities in management engineering, cites measurement techniques, and tells how manpower standards are developed.

Horwitz, Solis. *Planning an Organization—The Way to Cost Reduction.* (Fall 1966, pp. 5–9.)

The Assistant Secretary of Defense for Administration illustrates by specific example, the opportunities for cost reduction savings through organizational modernizing and streamlining actions.

Joss, Ernest J., and Sterling J. Livingston and John A. Wander. *How Much Will It Cost?* (Winter 1966, pp. 26–29.)

Management consultants discuss the difficulties in effectively pricing defense hardware and suggest some techniques for improving pricing methods.

Macy, John W. Jr. *A Cost Conscious Work Force.* (Winter 1966–1967, pp. 19–23.)

The Chairman of the U.S. Civil Service Commission outlines the responsibilities of the civilian employee in the DoD Cost Reduction Program, presents statistics on the suggestion awards system and emphasizes the importance of recognizing employees for their cost reduction accomplishments.

MacLaughlin, Victor J. *Inventory Control Points.* (Spring 1966, pp. 21–22.)

Major General MacLaughlin discusses the Defense Supply Agency's consolidation of three of its inventory control points into one, and the transfer of ICP functions from one supply center to another as representative of DSA's efforts to refine and improve supply management.

McNamara, Robert S. *Cost Reduction: Progress and Prospect.* (Winter 1966–67, pp. 5–6.)

The Secretary of Defense summarizes the results of five years of efficiency actions, describes some improvements in the system for measuring and reporting management progress, and assesses the future of the Cost Reduction Program.

Miller, Robert W. *Managing Management Systems.* (Summer 1966, pp. 11–14, 37–39.)

The Vice President of United Research, Inc. explores the upsurge in the development of management systems for DoD R & D based programs, states his opinion as to problems associated with the management of these systems, and suggests that a top DoD official be designated with authority for review and final pre-implementation approval of all such systems.

Morris, Thomas D. *The Incentive Awards Program as a Management Tool.* (Spring 1966, pp. 5–6.)

The Assistant Secretary of Defense for Manpower reviews results of the Defense incentive awards program, states the need for closer ties to the cost reduction program, and keys program effectiveness to command responsibility.

Peterson, Norman S. *Have You Tried Dimes?* (Spring 1966, pp. 37–39.)

Article describes the DIMES (Defense Integrated Management Engineering System) program, and uses Navy's implementation to illustrate the concepts and procedures involved, and benefits realized.

Petrovic, William F. *Shipyards Today—A Study in Streamlining.* (Fall 1966, pp. 29–33.)

The Deputy Commander for Shipyard Management, Naval Ship Systems Command explains how NAVSHIPS has launched a full-scale frontal assault to further improve the management of Navy's shipyards, and reduce the cost of their operations.

Reed, John. *Military Family Housing.* (Fall 1966, pp. 21–24, 56–57.)

The Deputy Assistant Secretary of Defense for Family Housing points out that Management of Military Family Housing has taken on all the aspects of big business, and goes on to explain how the five billion dollars invested is providing the highest housing value obtainable at the lowest possible cost. He cites adequate housing as a major factor in attracting and retaining high caliber service personnel.

Richardson, Dean. *Classification Management.* (Spring 1966, pp. 27–29.)

This article addresses problems in the management of classified defense information, including cost aspects and potential for cost reduction, and submits a formula for improvement.

Riordan, John. *Protecting The Consumer Against Inferior Quality.* (Fall 1966, pp. 29–33.)

The Director for Quality and Reliability Assurance, OSD, reviews the policies by which the DoD protects itself against inferior quality, and the rationale by which these policies and practices have evolved.

Riordan, John. *DoD Quality and Reliability Assurance.* (Winter 1966–67, pp. 39–42.)

Administration and Organization of the OSD quality and reliability assurance program is described, including historical background, interagency relations, and future prospects.

Sheridan, Edward J. *The Management of Military Real Property.* (Summer, pp. 17–19.)

The Deputy Assistant Secretary of Defense, Properties and Installations discusses the base closure program and illustrates how OSD has worked with state and local governments to cushion the impact on personnel and communities involved.

Shillito, Barry J. *Life Cycle Costs.* (Spring 1966, pp. 9–10, 40.)

The President of the Logistics Management Institute analyzes the total cost approach to procurement and describes a study that considers not only the acquisition price of equipment but also the follow-on costs of support during its service life.

Veal, William W. *Defense Contract Administration Services.* (Summer 1966, pp. 28–29.)

The Deputy Director For Contract Administration, DSA cites specific advantages and achievements resulting from the consolidation of contract administration responsibilities within the Defense Supply Agency.

Special Features

Avalanche of Savings from Alaska. (Winter 1966–67, pp. 36–38.)

How one of the Army's smallest commands carried out a successful Cost Reduction Program which produced savings in excess of $14.7 million during the three year period FY 1964–1966.

Cost Reduction Week at New Cumberland Army Depot. (Fall 1966, pp. 26–27.)

A picture story showing the complete cycle of a successful Cost Reduction Week at base level from initial planning thru the final review of accomplishments.

DIPEC—A Source for Needed Industrial Plant Equipment. (Winter 1966–67, pp. 15–18.)

Explains how the Defense Industrial Plant Equipment Center, Memphis, Tenn., serves as a vital source of assistance to Government agencies and Defense contractors by providing needed items of industrial plant equipment required in meeting military commitments, especially in time of emergency.

Navy Outleasing Program. (Fall 1966, pp. 18–20.)

Explains how the Navy outleases land for agricultural and other purposes. Results: acreage is maintained at no expense, the government receives a cash return, and the user benefits from temporary use of the real estate.

Operation Mona Lisa—A Logistics Masterpiece. (Winter 1966–67, pp. 7–8.)

Traces the many involved actions required to provide annual re-supply to over 70 aircraft control distant early warning (DEW Line), White Alice, and other remote special project sites located in Alaska.

Organizing for Efficiency and Economy. (Winter 1966–67, pp. 46–47.)

Fort Huachuca, Arizona, conducts a pilot program for improved control of several management tools such as Zero Defects, Cost Reduction, Management Improvement, Suggestion Program, etc. by placing all such programs under control of a single organizational unit.

President Honors Cost Reducers. (Fall 1966, pp. 8–14.)

A summary of events during Cost Reduction Week, with several photos highlighting the President's visit to the Pentagon for the Awards Ceremony during which he presented certificates of merit to 17 outstanding cost reducers.

Technical Review in Defense Item Entry Control. (Spring 1966, pp. 34–35.)

Discusses the establishment of DIECO (DoD Item Entry Control Office) and its assigned role in providing leadership for DoD in developing a practical and effective means to prevent the entry of unnecessary new items into the military supply system.

NAVY REACTS FAST TO INFORM FIELD OF SYSTEM CHANGES

Within a few short days after receiving interim instructions from the Office of the Secretary of Defense, three Department of Navy briefing teams were "on station" updating Navy and Marine Corps field activities on the "Revised Cost Reduction Program Reporting System."

Beginning on 28 November 1966 and continuing through 14 February 1967, the teams toured the United States giving executive briefings at 32 locations for field activities in the area. The briefings were attended by commanding officers, executive officers, cost reduction coordinators, audit personnel, and others concerned with the Cost Reduction Program. In order to cover all phases of the program, each team was made up of a member from the Cost Reduction Program Office in the Naval Material Command, a member from one of the systems commands, and a member representing Headquarters, Naval Audit Service.

The briefings consisted of two sessions. The morning session was designed primarily to provide commanding officers and executive officers with the philosophies, policies, and objectives of the revised program. The afternoon session, primarily for coordinators and audit personnel, was devoted to the coverage of detailed program information, changes in criteria, and revised reporting procedures. Question and answer periods were an important part of both sessions.

The team made it clear that the basic criteria of the Cost Reduction Program remain essentially unchanged, but that system refinements and procedural changes became necessary to make the Program easier to understand, administer and audit. The Navy's prompt action in "getting the word" to the field should be a major factor in effecting orderly and timely transition into the new reporting system.

(See Secretary McNamara's article "Cost Reduction—Progress and Prospect" in the Winter 1966–67 issue.)

Captain M. J. Stack, Commanding Officer, Naval Air Station Jacksonville, Florida welcomes attendees to the Navy's Cost Reduction Briefing at that station.

ARMY COMBAT UNITS GAIN FROM ZERO DEFECTS PROGRAM

"Error is a hardy plant; it flourishes in every soil"—Martin F. Tupper (1810–1889).

The U.S. Army's Southern Command agrees with this philosophy and is using the Zero Defects Program to make an error-free attitude habit-forming.

While recognizing that the main thrust of the DoD Zero Defects Program, to date, has been toward nontactical responsibilities, Southern Command is convinced that the Program's principles apply equally to combat units.

As the Command sees it, mistakes on the production line or in other nontactical situations may prove extremely costly in terms of dollars or labor time and therefore should be eliminated whenever possible. On the other hand, the Command realizes that the slightest miscalculation or error of judgment in a combat situation must be calculated in the cold hard terms of lives lost, combat-essential equipment captured or destroyed, and perhaps failure of the mission.

By proving the benefits of Zero Defects in the day-to-day administrative and logistics activities of its combat units, the Command believes it will establish a built-in concern for excellence which will extend into any combat situation.

The 193d Infantry Brigade has a well organized and effective Zero Defects Program that proves the point. Here is how it works.

All units in the Brigade report monthly error rate data in nineteen different areas classified under two general categories: Manpower Reliability and Materiel Reliability. A monthly Zero Defects Bulletin recognizes individuals who have achieved exceptional Zero Defect performance and ranks units in box-score fashion according to their error rate. These reports and scores help the Brigade Commander select outstanding performers among individuals and units and provide a basis for further concentration of effort to achieve defect-free work.

The Brigade publishes a quarterly Unit Reliability Profile (URP) for each unit and the Brigade as a whole. The URP graphically illustrates the unit position between an unsatisfactory error rate and Zero Defects in each of the nineteen areas.

The following table shows the percentage of error reduction in each of the 19 areas from February through December 1966.

Manpower Reliability:	*Percent*
Incident Reports decreased	68
Mess Accounting errors reduced	67
Training Record errors reduced	55
Marksmanship Qualification improved	65
Injury Rate decreased	57
Morning Report errors decreased	65
Pay Voucher errors reduced	86
Immunization Record errors reduced	56
Utilization improved	85
Materiel Readiness Report errors reduced	99
Unit Readiness Report errors reduced	93
Recognition increased	93
Materiel Reliability:	
Vehicle TI deficiencies decreased	88
Log Book deficiencies decreased	89
Accident Rate decreased	72
Weapons TI deficiencies decreased	92
Radio TI deficiencies decreased	87
Report of Survey errors reduced	87
Utilization increased	69

The overall improvement in the quality of work within the Brigade provides substantial side benefits in supporting administrative and logistical activitities reflected in reduced manhours to correct erroneous reports, more economical distribution of subsistence items, more accurate demand data for repair parts stock levels, and reduced repair and maintenance requirements.

ZD POSTER CONTEST

The U.S. Army Missile Command, Redstone Arsenal, Alabama, recently completed a Zero Defects Program Poster Contest. This contest drew 248 poster ideas from Missile Command employees. Twelve winners were selected and recognized under the Command's Incentive Awards Program. Poster ideas submitted ranged from patriotic, to straight message, to humor—as shown in photo at left.

Six employees selected from Arsenal personnel judged the posters. The winning posters are being used to promote Zero Defects at the Army Missile Command.

U.S. GOVERNMENT PRINTING OFFICE: 1967 O—248-685

DEMON-ETARY AWARD

Gremlins that run up costs are raked over the coals in Project DEMON at David Taylor Model Basin, Carderock, Maryland. Proof is the $735 award received by Lt. CDR. Henry Cox for an idea (called "Multichannel DEMON Processor") that yielded $15,400 in first-year savings.

(Ghosting this story was no cinch since the Model Basin forked over no details. The JOURNAL was told that its need-to-know was nil—and it probably was. We did find out, though, that whatever the devil DEMON is, it is now 12 times more effective.)

The photo above shows LCDR Cox, center, receiving warm congratulations from Captain D. K. Ela, USN, Commanding Officer and Director of David Taylor Model Basin. Dr. A. Powell, Technical Director, at right, also participated in the awards ceremony.

The presentation on 20 December 1966 represented the highest monetary award ever received by a military employee of the Model Basin.

SEE PAGE 46

"What? THREE THOUSAND WITHOUT A GOOF!"

UNIVERSITY OF FLORIDA
3 1262 09304 8188

FLARE

LOGISTICS . . . 1776

see page 6